

SPECIFICATIONS
FOR
REPLACEMENT OF UNDERGROUND
STORAGE TANKS
AT
SAN FERNANDO VALLEY SHOP AND WAREHOUSE
12201 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA
W.O. E1700045
(PLAN NO. 7397 BUILDING NO. 8/21)

Prepared by:

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
ARCHITECTURAL DIVISION
CITY HALL EAST, ROOM 890
LOS ANGELES, CALIFORNIA 90012

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GENERAL PROVISIONS
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SPECIFICATIONS

DIVISION 1

GENERAL PROVISIONS

GENERAL

SECTION 1 - DEFINITIONS

The following terms as used in this Contract shall be defined and interpreted as follows:

- (a) "Contract" or "this Contract": The particular Contract executed by the Contractor and the City, of which these General Provisions are a part. The following documents constitute a part of the contract: Agreement, Instructions to Bidders, Notice Inviting Bids, Contractor's Proposal, Plans and specifications, Soil Reports and/or Subsurface Investigation Reports, Summary of First Notice Replies, and all addenda and bulletins issued during the bidding period.
- (b) "Contractor" or "Prime Contractor": The person, firm, or corporation to whom this Contract is awarded by the City and who is party thereto.
- (c) "Subcontractor": Any person, firm, or corporation, other than an employee of this Contractor, supplying for and under agreement with, either the Contractor or any Subcontractor of the Contractor, labor or materials, or both, at the site of the Project in connection with this Contract.
- (d) "City Engineer": City Engineer of the Bureau of Engineering, or his authorized representative.
- (e) "Board": Board of Public Works, City of Los Angeles.
- (f) "Plan", "Plans" or "Drawings": Any and all plans, maps, profiles, drawings, sketches, charts, or schedules furnished by the City and on which are detailed or delineated the location or instructions regarding the work to be done.
- (g) "Project": The structure or improvement to be constructed in whole or in part, through the performance of this Contract.
- (h) "Work": Labor or materials or both; or the complete Contract work.
- (i) "Inspector": Authorized representative of the Director, Bureau of Contract Administration.
- (j) "City": City of Los Angeles, a Municipal Corporation.
- (k) "Specifications": Written instructions, provisions, conditions, and detailed requirements pertaining to materials, methods, and manner of performing the work and to the quality of work to be furnished and installed under the Contract.

- (1) "Holiday": Reference to holidays shall mean those holidays and dates as observed by the Los Angeles City Offices. List of such holiday dates are available in the Board of Public Works Office.

SECTION 2 - NOTICE

Any notice required to be given to the Contractor will be by certified mail and may be given by delivering said notice, or a copy thereof, to the Contractor in person, or if Contractor cannot be found with reasonable diligence, then by posting a copy of said notice in a conspicuous place at the site of the work.

SECTION 3 - AUTHORITY OF BOARD

- (a) As the representative of the Board, the City Engineer shall decide, within the provisions of the Specifications, all questions which may arise concerning the quality or acceptability of materials furnished and work performed. The City Engineer shall determine all matters pertaining to Contract amount, Change Order, design, and interpretation of Plans and specifications.
- (b) Final determination of the acceptable fulfillment of the Contract on the part of the Contractor shall be made by the Board.

PLANS AND SPECIFICATIONS

SECTION 4 - ADDENDA AND BULLETINS

- (a) **Addenda:** The written document, issued during the bidding period, which, modifies, supersedes or supplements the Contract Documents.
- (b) Addenda shall form a part of the Instructions to Bidders, Contract Drawings, and/or Specifications and shall be reflected on the Bidder's proposal.
- (c) Addenda shall take precedence over all other Drawings, Specifications, and Contract Documents. Subsequent addenda shall govern over prior addenda only to the extent specified.
- (d) **Bulletins:** Are issued to give further instruction to the Bidders; they do not change or modify any part of the Contract Documents, and are issued during the time of the bidding.

SECTION 5 - MANDATORY PROVISION

Any mention in the Divisions of these Specifications which follow Division 1 (General Provisions) or indication on drawings of articles, materials, operations, or methods requires that the Contractor provide each item mentioned or indicated, of quality or subject to qualifications noted; perform according to conditions stated, each operations prescribed, and provide therefore all necessary labor, equipment, and incidentals, even though such mention of articles, materials, operations, methods, quality, qualifications, or conditions is not expressed in complete sentences.

SECTION 6 - ISSUANCE OF PLANS AND SPECIFICATIONS

- (a) Copies of all Plans and Specifications will be kept on file in the office of the Bureau of Engineering in the Los Angeles City Hall.
- (b) Unless otherwise provided in the Contract Documents, the City Engineer will furnish to the Contractor, 10 sets each of the Plans and Specifications without charge. Additional sets desired by the Contractor for Contractor's use or the use of Contractor's Subcontractors or Sub-Subcontractors will be furnished upon request, but at the Contractor's expense.
- (c) All Drawings, Specifications and copies thereof are the property of the City. They are not to be used on other work.
- (d) The Contractor shall keep on the site of the project, at all times, a complete set of the Plans and Specifications as approved by the Los Angeles Building Department for the Inspector's use.

SECTION 7 - STANDARD SPECIFICATIONS

- (a) All reference in the Specifications or on the Drawings to Standard Specifications shall be understood to refer to "Standard Specifications for Public Works construction", latest edition, published by Building News, Inc., as amended or revised to date of receiving bids.
- (b) References made to other Specifications and Codes refer to editions in effect, as amended or revised on the last day on which bids will be received.

SECTION 8 - INTERPRETATION OF PLANS AND SPECIFICATIONS

- (a) Every part of the work, as shown on the Drawings and described in the Specifications, must be complete and finished. No deviations are to be made from the Drawings or Specifications without previous written authorization from the City Engineer.
- (b) In general, the Drawings will show dimensions, positions and kind of construction, and the Specifications will define materials, qualities and methods. Any work called for on the Drawings and not mentioned in the specifications, or vice versa, shall be performed as though full set forth in both. Work not particularly detailed, marked, or specified shall be the same as similar parts that are detailed, marked, or specified.
- (c) The Drawings have been drawn to the indicated scales, except where otherwise noted. Dimensions indicated by figures or numerals shall govern in all cases whether drawn to scale or not. Larger scale drawings shall take precedence over smaller scale drawings. Drawings shall not be scaled for dimensions.
- (d) In the case of differences between the Specifications and the Drawings, the Specifications shall govern.
- (e) Should errors appear in the Drawings or in the work done by others affecting this work, the Contractor shall immediately notify the City

Engineer, who will issue instructions as to procedure. If the Contractor proceeds with the work so affected, without instructions from the City Engineer, Contractor shall remove the incorrect work or make the necessary corrections to comply with the City Engineer's instructions at no cost to the City. This includes typographical errors in the Specifications and notational errors on the Drawings where doubtful of interpretation.

- (f) The general character of the detailed work is shown on the Contract Drawings, but minor modifications may be made in larger scale drawings. The City Engineer will furnish additional details, when needed, to more fully explain the work, and same shall be considered part of the Contract. Should any detail submitted later than the Contract Drawings be, in the opinion of the Contractor, more costly than the scale drawings and the Specifications indicate, written notice thereof shall be given to the City Engineer prior to performing the work. The claim will then be considered, and if justified, said detail drawings will be amended or the extra work authorized. Non-receipt of such notice shall relieve the City of any claim.
- (g) Where on any Drawings a portion of the work is drawn out or detailed and the remainder is indicated in outline, the drawn out or detailed parts shall apply also to all other like portions of the work. Where ornament or other detail is indicated by starting only, such detail shall be continued throughout the courses or parts in which it occurs and shall also apply to all other similar parts in the work, unless otherwise indicated.
- (h) References made to other specifications and codes refer to editions in effect at the date bids are received for the project, and include all addenda and errata prior to that date.

SECTION 9 - ACCURACY OF PLANS AND SPECIFICATIONS

- (a) Omissions from the Plans and Specifications shall not relieve the Contractor from the responsibility of furnishing, making, or installing all items required by law or usually furnished, made or installed in a project of the scope and general character indicated by the Plans and Specifications.
- (b) The Plans show conditions as they are supposed or believed by the City Engineer to exist, but it is not intended or to be inferred that the conditions as shown thereon constitute a representation or warranty, expressed or implied, by the City or its officers, that such conditions are actually existent, nor shall the City, or any of its officers, be liable for any loss sustained by the Contractor as a result of any variance between conditions as shown on the Plans, the actual conditions revealed during progress of the work or otherwise, except as indicated in SECTION 52, of this Division.

SECTION 10 - DIVISION OF SPECIFICATIONS

- (a) The Specifications are arranged into the Construction Specifications Institute (C.S.I.) sixteen (16) Division - Section format. Each "Section" constitutes a unit of work and related "Sections" are grouped under broad generic headings called Divisions.

- (b) The organization of the Specifications into Division, Sections, and articles shall not control or limit the Contractor in dividing the work among subcontractors, a sub-subcontractor, or to establish the extent of work to be performed by any trade. The Contractor shall be solely responsible for all subcontract arrangements of work regardless of the specification organization.

SECTION 11 - SHOP DRAWINGS AND MANUFACTURERS' DATA

- (a) The Contractor shall prepare, approve, sign and submit to the City Engineer any and all Shop Drawings, Manufacturers' Project Data, Wiring Diagrams and Samples required by the Construction Documents.

NOTE: All references in the Technical Specifications under "Shop Drawings" to the words "approval of" shall mean "reviewed by".

- (b) The Contractor by preparing, reviewing, approving and submitting the Shop Drawings, Manufacturers' Product Data, Wiring Diagrams and Samples represents that the Contractor has determined and verified all materials, field measurements and filed construction criteria related thereto, and has checked and coordinated the information contained within such submittals with the requirements of the Work, the Project and the Contract Documents.
- (c) The Contractor shall inform the City Engineer in writing of any and all deviations and/or questions regarding the Contract Documents, and shall properly identify these areas of concern in the letter of transmittal of the Shop Drawings, Manufacturers' Product Data, Wiring Diagram and Samples for proper written disposition respectively by the City Engineer. The Contractor shall provide reproducible of Shop Drawings which exceed 11-inch X 17-inches.
- (d) All Shop Drawings, Manufacturers' Product Data, Wiring Diagrams and Samples submitted, shall be accompanied by letter of transmittal and shall be addressed to the City Engineer to be received and filed.
- (e) The Contractor is not relieved of the responsibility for any deviation from the requirements of the Contract Documents, by virtue of Contractor's approval and submittal of the Shop Drawings, Manufacturers' Product Data, Wiring Diagrams and Samples to the City Engineer. All deviations and/or interpretations of the Contract Documents must be approved in writing by the City Engineer.
- (f) The Contractor's review and approval of the Shop Drawings, Manufacturers' Product Data, Wiring Diagrams and Samples is not relieved from any requirements of the Contract Document regardless of any errors or omissions in such submittals.
- (g) The Shop Drawings shall be general and shall not relieve the Contractor from the responsibility for proper fitting and construction of the work, nor from furnishing materials and work required by the Contract, which may or may not be indicated on the Shop Drawings.
- (h) Shop Drawings shall show in detail the size, sections and dimensions of all the members, the arrangement and construction of all connections and

joints and other pertinent details; also, all holes, straps and other fittings required by other Contractors for attaching their work. When required, by the City Engineer or by Standard Practice of the Contractor, engineering computations shall be submitted for the record. The Contractor shall be responsible for delivering approved copies of Shop Drawings to all others whose work is dependent thereon.

- (i) At all times, the Contractor shall maintain at the site of the project, a complete file of Shop Drawings and Manufacturers' Data of its own and all subcontractors. All Shop Drawings and Manufacturers' Data shall be reviewed and signed to indicate approval by the Contractor.
- (j) Submittals shall be made within the times specified in the various Divisions, of the Construction Documents. If time is not specified, they shall be made within a period which will cause no delay in the work. The Contractor shall allow twenty-one calendar days on the project construction schedule for each item submitted for review by the City Engineer.
- (k) In the event the City Engineer finds the submittal to be incomplete, it will be returned to the Contractor for required revised drawings. The Contractor will revise the drawings and resubmit as indicated for original submittals. Any delay resulting from the need for resubmittals shall be the Contractor's responsibility.
- (l) In the event, the Contract Documents are prepared by a Consultant Architect or Engineer, the pertinent requirements of this Section will be effective, except as follows or as otherwise modified in the Divisions that follow:
 - 1. All references in this SECTION to the City Engineer shall mean the Consultant Architect or Engineer.
 - 2. Seven copies of each submittal are required, with six copies to be delivered to the Consultant Architect or Engineer and one copy to the Bureau of Engineering be submitted simultaneously.
 - 3. If submittal is found to be incomplete, Contractor will be notified by the Consultant Architect or Engineer if revised drawings are required. (Revisions stemming from substitutions for "or equal" determinations).
 - 4. The Contractor is to revise the drawings as required and to resubmit revised Shop Drawings to the Bureau of Engineering and to the consultant Architect or Engineer simultaneously; with one copy to the Bureau of Engineering and six copies to the Consultant Architect or Engineer.
 - 5. When Shop Drawings are required due to substitutions for "or equal" determination, after final check, two copies, reviewed and signed by Consultant Architect or Engineer shall be forwarded to the Contractor and one copy to the Bureau of Engineering.

SECTION 12 - REFERENCE TO TRADE NAMES

- (a) Whenever in the Specifications, any material or process is indicated or specified by patent or proprietary name or by name of manufacturer, such Specifications shall be deemed to be used for the purpose of facilitating description of the material or process desired, and shall be deemed to be followed by the words "or equivalent," and the Contractor may offer any material or process which shall be equal in all essential characteristics to that so indicated or specified. If the material, process, or article offered by the Contractor is not, in the opinion of the City Engineer, equal to that specified, then the Contractor must furnish the material, process, or article specified, or one that, in the opinion of the City Engineer, is equal thereof in all essential characteristics.
- (b) The Contractor's request or submittal of any material or process which he deems equivalent to that so specified or indicated on the drawings shall be submitted to the City Engineer within forty (40) days after the notice to proceed. It shall be incumbent upon the Contractor to furnish sufficient data to the City Engineer to support his claim of equality. Submit separate request for each substitution.
- (c) Any request or submittal received after the forty (40) day period specified above will be considered as not equal to that so specified and will be processed as a substitution described in paragraph below. No other requests for substitutions will be considered after expiration of the forty (40) calendar day period specified except that in exceptional cases where it is in the best interests of the City.
- (d) If the City Engineer decides to accept for use in the projects a material which is not the equal of that specified, authority for substitution shall be made in the manner described herein for "Extra Work and Changes" with appropriate monetary allowance for the difference in value. Substitutions accepted by the City Engineer after the forty (40) day period shall not result in any extra cost to the City.
- (e) Any materials, process or article may be requested for a substitution by the Contractor, in lieu of that specified under the following conditions:
 - 1. The requests must be submitted in writing and in a manner described herein for "Extra Work and Changes" with appropriate monetary allowances for the difference in value. Substitute product shall not be ordered or installed without written acceptance from the Engineer.
 - 2. The requests must be submitted forty (40) days prior to starting the work, as established by the City Engineer, so as not to cause any delay in completion of the project. No other request will be considered after expiration of the forty (40) day period specified, except that in exceptional cases where it is the best.
 - 3. The Contractor, at its own expense, shall have the substitution tested by an approved testing laboratory, under the directions of the City Engineer, if so requested.

4. The Contractor agrees to pay for all engineering and design services, if required, to make all changes and adjustments in material and work of all trades directly or indirectly affected by the substitute, to the satisfaction of the City Engineer, at no cost to the City.
 5. All requests for substitution shall be made through the Prime Contractor; submission by the Prime Contractor shall imply his approval of such substitution.
 6. No requests for substitutions will be considered during the bidding period.
 7. The Contractor shall furnish adequate data with his request for approval of a substitute, to enable the City Engineer to evaluate the proposed substitution. Give comparison between proposed substitution and specified product of quality, performance, warranty, cost data and amount of net change to Contract sum, availability of maintenance service and replacement materials, effect on Construction Schedule and any change required in other work or products.
- (f) Substitution will not be considered when they are indicated or implied on the Shop Drawings or on Product Data submittals without separate written requests.

SECTION 13 - FAMILIARITY WITH PLANS AND SPECIFICATIONS

It shall be the responsibility of the Contractor to be so thoroughly familiar with all details of the project, including the work of its own forces and of all Subcontractors and Sub-subcontractors, that the following shall be called to the attention of the City Engineer for instructions before an error is made on the job:

- (a) Errors and omissions in the Drawings and Specifications
- (b) Work on the Drawings or in the Specifications which, if so constructed, would result in confusion or interference with other work or the work of other trades, including the location of fixtures and equipment.

SECTION 14 - CASH ALLOWANCES

- (a) Whenever the Specifications provide a lump sum amount, as a cash allowance for specific work, in lieu of detailed Plans and Specifications, the Contractor shall include that amount for the designated work in his bid. The specified lump sum amount shall be deemed to represent the cost of the designated work, not including any allowance for Contractor's overhead or profit.
- (b) When, during the progress of the project, the City Engineer furnishes detailed Plans and Specifications for the designated work, any difference in cost to the Contractor from the specified lump sum shall be added to or deducted from the Contract amount as provided herein for "Extra Work and Charges".

THE WORK

SECTION 15 - TIME FOR COMMENCING AND COMPLETING WORK

- (a) The Contractor shall commence the work required by this Contract within 15 calendar days of date specified in notice from the Board of Public Works to proceed with the work, and shall complete the work within 90 calendar days of said date plus any approved extensions of time as herein described.
- (b) The City Engineer may permit, or direct the contractor to suspend any work affected by the inclemency of the weather, or other climatic conditions. If as a direct result of such suspension critical activities are impacted and a project delay results from this impact, the Contractor will be entitled to an extension of time as provided in (c) and (d) below, but the contractor shall not be entitled to damages or additional payment due to such delays."
- (c) Extensions of time will be considered for delays in commencement, prosecution or completion of the contract work due to causes beyond control and without the fault or negligence of the Contractor; including but not restricted to: Failure of the City to provide the right-of-way without prior notice through these specifications and other contract documents, acts of God or of a public enemy, acts of the Federal Government or any State or political subdivision thereof, insurrections, war, fires, floods, explosions, earthquakes, lightning, or other catastrophes, epidemics, quarantine restrictions, strikes, vandalism, labor disputes, provided that the Contractor shall request extension of time for such delay, stating the date of each delay and the causes therefore, within 15 calendar days after the beginning of the delay. Extension of time will be granted, when found to be justified under the above conditions, for periods of time equal to the time by which the interim milestone and project completion dates are impacted by these delays in accordance with Section 01311, "Network Analysis." The Contractor shall not be entitled to damages or additional payment due to such delays.
- (d) All requests for time extensions shall be accompanied by a revised construction schedule, and other data as requested by the City Engineer. Any and all extensions of time granted under the provisions of these specifications shall not release the sureties on the bonds accompanying the Contract for the work require herein, which said bonds shall remain in full force and effect until the discharge of the Contract.
- (e) "The Contractor may be compensated for delays caused solely by the failure of the City to provide necessary information known to the City at the time of bid, failure to deliver materials shown in the Contract Documents to be furnished by the City, or for suspension of the work by the City for its own convenience or benefit. If the contractor sustains a loss which could not have been avoided by the judicious handling of forces, equipment or plant which would have provided a reasonable mitigation of the loss, there shall be paid to the contractor such amount as the Engineer may find to be fair and reasonable compensation for such part of the Contractor's actual loss as was unavoidable and not concurrent with Contractor caused delays or non-compensable delays such as those described in (c) above."

- (f) "No extension of time will be granted for a delay caused by the inability to obtain materials unless the Contractor furnishes proof to the City Engineer that such delays are unavoidable. The City Engineer will grant a time extension only if it is in the best interest of the City to do so."

SECTION 16 - LIQUIDATED DAMAGES

- (a) Should the Contractor fail to complete the work within the time agreed upon in the Contract, or within the stipulated time for the completion, as extended, or within such extra time as may be allowed for delays and extra work as herein provided, the City will deduct and retain out of the moneys which may be due the Contractor, as liquidated damages, but not as a penalty, the sum of \$400 per day for each and every day that the time consumed in the execution of the work may exceed the time stipulated for its completion, or such stipulated time as the same may be increased as herein provided, which said sum of \$400 per day, in view of the difficulty of estimating such damage, as hereby agreed upon, fixed and determined by the parties thereto as the liquidated damages that the City will suffer by reason of such default and not by way of penalty.
- (b) In addition to the specified liquidated damages, the City will deduct and retain out of the moneys which may be due this Contractor, all cost to the City for direct supervision and inspection of the Contractor's work during the period of time between the stipulated date of completion and the actual date of completion.

SECTION 17 - PROGRESS SCHEDULE AND REPORTS

The Contractor shall furnish a practical work schedule of expected progress of Contracted Work within 15 days of the official start date indicating approximate sequence (start and finish dates), of each work activity necessary to complete the Contracted Work. The schedule shall be in the form of a "Bar Chart" graphically showing the order and interdependence and sequence of all work activities. Upon approval of the "Bar Chart" by the City Engineer and the Inspector, the Contractor shall maintain a copy thereof in the "Job Office" of the Inspector, recording work progress at the end of each Calendar Week.

SECTION 18 - PERMITS

The Contractor shall obtain and pay for all permits, licenses, and fees required by the City, County of Los Angeles, or State Laws, except the building permit as defined by SECTION 91.0201 of the Municipal Code, which will be furnished by the City Engineer, or except as may be otherwise noted or defined in Division 1A, General Requirements and Technical Specifications "Sections".

SECTION 19 - CONTRACTOR'S REPRESENTATIVE

At all times when any work is being performed at the site of the project, the Contractor shall be present in person or be represented by a competent superintendent satisfactory to the City Engineer. The Contractor's representative shall have authority to act for the contractor in all matters concerning the work and shall have the ability to so organize the work and the work of the Subcontractors, as to attain complete cooperation and minimize delays.

SECTION 20 - LAYOUT OF WORK

- (a) The City will furnish bench marks and property line stakes for the commencement of the work, but the Contractor shall furnish all additional surveying necessary for the project, and shall protect the City monuments from damage for the duration of the project.
- (b) The Contractor shall perform and be responsible for the accurate layout of all portions of the work. He shall verify all dimensions on the Drawings and shall report to the City Engineer, any discrepancies before proceeding with related work.

SECTION 21 - ALLOTTED WORKING SPACE

The Contractor shall limit his operations to the "working site" or job-site and the areas immediately adjacent thereto as shown on the Plans, specified or authorized by the Inspector.

SECTION 22 - CONSTRUCTION PROCEDURES

- (a) The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, method, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless Contract Documents give other specific instructions concerning these matters.
- (b) The Contractor shall be responsible to the City for acts and omissions of the Contractor's employees, Subcontractors and Sub-subcontractors and their agents and employees, and other persons performing portions of the Work under a contract with the Contractor.
- (c) The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the City Engineer's administration of the Contract or by tests, inspections or approvals required or performed by persons other than the Contractor.
- (d) The Contractor shall be responsible for inspection of portions of Work already performed under this Contract to determine that such portions are in proper condition to receive subsequent Work.

SECTION 23 - WORKMANSHIP AND MATERIAL

- (a) Unless otherwise specifically provided for in the Specifications or in the Drawings, all workmanship, equipment, materials, and articles incorporated in the work are to be of the most suitable grade of their respective kinds for the purpose and equipment, materials and articles shall be new, best quality, undamaged, and not defective.
- (b) All materials to be incorporated in the structure shall be protected from damage during delivery, storage and handling, and after installation until acceptance of work.

SECTION 24 - METHODS AND APPLIANCES

The methods and appliances adopted by the Contractor shall be such as will secure a satisfactory quality of work, and will enable the Contractor to complete the work in the time agreed upon. If at anytime such methods and appliances appear inadequate, the City Engineer may order the Contractor to improve their character, or increase their efficiency, and the Contractor shall conform to such order, but the failure of the City Engineer to order such improvement of methods, or increase of efficiency, will not relieve the Contractor from his obligation to perform good work, or finish it in the time agreed upon.

SECTION 25 - BUILDING REGULATIONS AND CODES

- (a) The Contractor shall perform the work in accordance with the requirements of the Los Angeles City Building Code and all other regulations, laws, and ordinances, even though such requirements are not specifically mentioned in the Specifications or shown on the Drawings.
- (b) When the work required by the Plans and Specifications is in conflict with any such law or ordinance, the Contractor shall notify the Inspector. The conflict will be reviewed by the City Engineer and the Contractor shall not proceed with the work until the Inspector has so ordered.

SECTION 26 - WORKMEN

Only competent workers shall be employed on the work. Any person, employed, who is, in the opinion of the Inspector, found to be incompetent, intemperate, troublesome, disorderly, or otherwise objectionable, or who fails or refuses to perform the work properly and acceptably, shall be immediately removed from the work by the Contractor and not be re-employed on the work.

SECTION 27 - ACCIDENT PREVENTION

The safety provisions of applicable laws, building and construction codes shall be observed. Machinery, equipment, and other hazards shall be guarded or eliminated in accordance with the safety provisions of the Division of Industrial Safety, Department of Industrial Relations, State of California.

SECTION 28 - PROTECTION OF PERSONS AND PROPERTY AND RESTORATION OF EXISTING IMPROVEMENTS

- (a) Precaution shall be exercised at all times for the protection of persons and property. The Contractor shall furnish or cause to be furnished and maintained, all covers, scaffolds, fences, guards, and other protective devices as required by the Inspector and the Local and State rules, ordinances, or regulations necessary for protection of public and private property and the public safety. Contractor shall hold the City harmless from any and all damage to persons or property.
- (b) The Contractor shall protect the work from injury and make good all damage without charge.
- (c) Construction fences and barricades shall be of reasonable good appearance, and shall be maintained free of signs, posters, writing, marking, and any other things which detract from reasonably good appearance.

- (d) The Contractor shall repair or replace all existing improvements (e.g., curbs, sidewalks, driveways, fences, signs, utilities, street surfaces, structures, etc.) damaged or removed as a result of his operations, to the satisfaction of the governing authority having jurisdiction.
- (e) In case of damage, which in the opinion of the Inspector after consulting with the City Engineer, threatens the safety of persons or property, the Contractor shall immediately make all repairs necessary for the removal of the hazard.

SECTION 29 - SANITATION

Adequate sanitary conveniences of an approved type for the use of persons employed on the work, and properly secluded from public observation, shall be provided and maintained by the Contractor in such a manner and at such points as shall be required or approved by the Inspector. These conveniences shall be maintained at all times without nuisances and their use shall be strictly enforced. Upon completion of the work, they shall be removed from the premises, leaving the premises clean and free from nuisance.

SECTION 30 - CONSTRUCTION LIGHT AND POWER

Contractor to arrange with City Department of Water and Power; to assume all costs; to make and remove all connections to power facilities; including light and power as necessary for required tests.

SECTION 31 - CONSTRUCTION WATER

Contractor to arrange with City Department of Water and Power; to assume all costs; to make and remove all connections to water facilities; including water as necessary for required tests.

SECTION 32 - GAS FOR TESTS

Contractor to arrange with Gas Company; to assume all costs.

SECTION 33 - JOB TELEPHONE

Contractor to arrange with Telephone Company; to assume all costs and pay for all calls over job telephone; job telephone to be so located that it is easily accessible from the job office; job telephone to be provided with an outside extension bell. The job telephone shall be for City personnel use only.

SECTION 34 - TEMPORARY STORAGE SHED

The Contractor shall provide a temporary shed on the site for the safe storage of all materials and equipment. The shed shall be weathertight with a wood floor above grade. The shed shall be removed upon completion of the work, or when so ordered by the Inspector.

SECTION 35 - JOB OFFICE

The Contractor shall provide one office for the Inspector for the entire period of construction or until Inspector directs removal. The location shall be as directed by the City Engineer. The construction shall be temporary;

weathertight; 12-feet by 12-feet, 144 square foot floor area; screened windows that open in opposite walls; door with latchset and hasp for padlocking; padlock to be furnished by the City; furniture shall be provided as follows: Built-in counter for full set of job blue prints, 5-foot double pedestal desk, metal file cabinet for filing, 9-inch X 12-inch folders, two desks, metal file cabinet for filing, 9-inch X 12-inch folders, two chairs, one stool, one plan rack, and drinking fountain. Electrical power shall be provided for (4) duplex convenient outlets, and office shall be illuminated at the counter and the desk.

SECTION 36 - WORK BY CITY OR OTHERS

The City may perform with its own forces or award to other Contractors, any extra work, or any portion of the project, not included in this Contract.

SECTION 37 - COOPERATION AND COLLATERAL WORK

The Contractor shall be responsible for ascertaining the nature and extent of any simultaneous, collateral and essential work by others. The City, its workers and others shall have the right to operate within or adjacent to the work site to perform such work.

The City, the Contractor and each of such workers, contractors and others, shall coordinate their operations and cooperate to minimize interference.

The Contractor shall include in its Bid, all costs involved as a result of coordinating its work with others. The Contractor will not be entitled to additional compensation from the City for damages resulting from such simultaneous, collateral and essential work. If necessary to avoid or minimize such damage, or delay, the Contractor shall redeploy its work force to other parts of the work.

Should the Contractor be delayed by the City, and such delay could not reasonably have been foreseen and prevented by the Contractor, the City Engineer will determine the extent of the delay, the effect of the delay on the project as a whole, and any commensurate extension of time.

SECTION 38 - REMOVAL OF PLANT AND CLEAN-UP

Upon the completion of the Contracted Work, the Contractor shall remove all his plant tools, materials, and other articles from the property of the City. Should he fail to take prompt action to this end, the City at its option and without waiver of such other rights as it may have, on 30 days' notice, treat them as abandoned property. Contractor shall also sweep all floors broom clean, clean all exterior and interior surfaces and window lights, and remove all rubbish from the property of the City.

SECTION 39 - GUARANTY-WARRANTY

- (a) The Contractor shall and hereby does warrant and guarantee that all work executed under this Contract will be free from defects of materials and workmanship for a period of one (1) year from the date of final acceptance of the project; except that certain specific items of work may require a guaranty or warranty for a greater period of time where hereinafter specified; the Contractor further agrees to repair or

replace, at its own expense, all such defective work and all other work damaged thereby, which becomes defective during the term of the above-mentioned guaranties and warranties.

- (b) It shall be understood that the surety for the faithful performance bond submitted in conformance with the terms of the Contract by the Contractor for this project, is liable on its bond for all obligations of the Contractor including guarantee provisions.
- (c) The Contractor further agrees that within 10 calendar days after being notified in writing by the City Engineer of any work not in accordance with the requirements of the Contract, or any defects in the work, the Contractor will commence and prosecute with due diligence all work necessary to fulfill the terms of this guarantee, and to complete the work within a reasonable period of time. In the event the Contractor fails to so comply, it does hereby authorize the City to proceed to have such work done at the Contractor's expense, and Contractor will pay the cost thereof upon demand. The City shall be entitled to all costs, including reasonable attorney's fees necessarily incurred upon the Contractor's refusal to pay the above costs.
- (d) Notwithstanding the foregoing Subsection (c), in the event of an emergency constituting an immediate hazard to the health or safety of the City's employees, property, or licences the City may undertake, at the Contractor's expense, without prior notice all work necessary to correct such hazardous conditions when it was caused by work of the Contractor not being in accordance with the requirements of the Contract.

SECTION 40 - PATENTS

The Contractor shall save the City harmless from any and all claims which may be made on account of any illegal infringement of any patent or patents of processes, methods, and appliances used in construction of the work that are not specifically required by the Specifications, and shall defend any such action prosecuted against the City arising out of such claims and shall pay with costs, and a reasonable attorney's fee, any judgement so obtained. The City shall similarly save the Contractor harmless from claims made on account of alleged infringement of any patented articles or processes which actually are required by the Plans or the Specifications.

SECTION 41 - MANUFACTURER'S REFERENCE DATA FOR USE IN MAINTENANCE AND REPAIR OF EQUIPMENT

In addition to Shop Drawings and Manufacturer's Data required to be submitted prior to start of construction and during progress of construction in conformance with Section 11 of this Division, the following data is required to be submitted by the Contractor to the City Engineer at the completion of the project as a condition precedent to the City's acceptance of the work. The data shall be provided in duplicate for each item of equipment so designated in the the various trade divisions of these Specifications and shall include:

- (a) Manufacturer's name and address.
- (b) Local agent's name and address.

- (c) Model number and/or name.
- (d) Parts catalog.
- (e) Complete descriptive data, including manufacturer's specifications performance charts and wiring diagrams, and operation and maintenance manuals.

SECTION 42 - RECORD DRAWINGS

Record Drawings shall be provided as specified in other Divisions of these Specifications. "As installed" drawings, with indications in suitable ink or chemical fluid on one set of prints to produce a record of the complete installations, shall be kept on the job and up-to-date during construction. At the completion of the work and prior to final inspection, the Contractor shall copy all record "as installed" data, using red ink, onto a set of blue-line prints furnished by the City.

The Contractor shall certify to the completeness and accuracy of the "as installed" information indicated on the blue-line prints with its signature. The signed blue-line prints shall be delivered to the City Engineer as a condition precedent to the City's acceptance of the Contract work.

INSPECTION AND ACCEPTANCE

SECTION 43 - MATERIALS, SAMPLES AND TESTING

- (a) All materials required by the Specifications to be tested shall be sampled and tested in the manner prescribed for the particular materials, and the results of such tests shall be reported to the Inspector in the form of affidavits made and attested to by a testing agency. The final decision as to acceptance of the material shall be the responsibility of the City Engineer.
- (b) When any materials required to be sampled or tested prior to use are delivered to the site or are ready for testing, the Contractor shall so notify the Inspector and shall allow sufficient time in the planning of the work for such sampling or testing.
- (c) When any tests indicate nonconformity with the Specifications, all materials of which the tested samples are representative shall be immediately removed from the site and shall not again be brought upon the work-site.
- (d) Except where otherwise specifically specified, the Department of General Services Standards Unit of the City of Los Angeles will make all required tests of material without cost to the Contractor.
- (e) Unless otherwise directed or specified, samples to be tested will be selected by the Inspector or the Standards Unit from material at the job-site. The Contractor shall provide every reasonable facility for aid to the Inspector or the Standards Unit in such testing or sampling.
- (f) Whenever requested, samples of any material proposed to be used in the work shall be delivered by the Contractor, free of charge, to the place

within the City of Los Angeles designated by the Inspector or the Standards Unit, Department of General Services.

- (g) When sampling of materials for tests is to be made at a warehouse, factory, or mill within the limits of Los Angeles County, the Contractor shall notify the Inspector a sufficient length of time in advance to allow for arrangements to be made for such sampling.
- (h) When sampling of materials for tests is to be made at any point outside the limits of Los Angeles County, the Contractor shall engage a testing agency approved by the Los Angeles City Department of Building and Safety and by the Inspector, to make the test and furnish the affidavit specified below. All cost shall be borne by the Contractor.
- (i) When the manufacturer, fabricator, or dealer of materials provides the results of tests from samples taken at the mill, factory, or warehouse, and when the testing agency is approved by the Inspector, and the tests have been made in conformity with specifications for the specific material, the Inspector will accept the reports of such tests if made in the form of the affidavit specified below.
- (j) Whenever any testing agency takes samples of materials other than at the site, the deliveries to the site of materials represented by such samples shall be identified as specified for the specific material, and the results of such tests shall be reported to the Inspector in the form of affidavits attested to by the testing agency. Such affidavits shall furnish the following information with respect to the material sampled:
 - 1. Manufacturer's name and brand.
 - 2. Place of sampling.
 - 3. Sufficient information to identify the lot, group, bin, or silo from which the samples were taken.
 - 4. Amount of material in the lot sampled.
 - 5. Statement that the material has passed the requirements.
 - 6. Signature of the person making the affidavit, and the date of execution of the affidavit.
- (k) Any materials sampled other than at the site will be subject to such additional sampling or testing at the site as may be ordered by the Inspector.

SECTION 44 - INSPECTION

- (a) In order to allow for inspection, and in addition to any inspection required by the Department of Building and Safety or any inspection required elsewhere in these Specifications, the Contractor shall notify the Inspector a sufficient length of time in advance, of the permanent concealment of any materials, or work by other materials, or work.

- (b) Whenever the Contractor intends to carry on the work of this Contract on a Saturday, Sunday, or Holiday, or more than eight (8) hours a day on a Monday through Friday, he shall notify the Inspector of such intention at least 24 hours in advance so that inspection may be arranged. The Contractor shall pay extra costs to the City for inspection and other incidental expenses caused by such overtime work. Whenever the Contractor is requested by the Inspector to work overtime, in the interest of the City, the expense of the overtime wage paid to the City Inspectors will be borne by the City. No demolition will be permitted on Saturdays, Sundays, or Holidays without approval of the Board of Public Works.
- (c) If any work is concealed or performed without the prior notice specified above, then the work shall be subject to such tests or exposure as may be necessary to prove to the Inspector that the materials used and the work done are in conformity with the Plans and Specifications. All labor and equipment necessary for exposing and testing shall be furnished by the Contractor. The Contractor shall replace all material or work damaged by exposing and any faulty materials or workmanship evidence by such exposure or testing. All cost shall be borne by the Contractor.
- (d) When, in order to comply with the intent of the Specification and when not otherwise specified, inspection should be made at the plant or mill of the manufacturer or fabricator of material, and such plant or mill is within the limits of Los Angeles County, the Contractor shall notify the Inspector a sufficient length of time in advance to allow for arrangements to be made for such inspection.
- (e) When such plant or mill is outside the limits of Los Angeles County, the Contractor, at its own expense, shall engage an Inspector, approved by the City Engineer to inspect the materials at the said plant or mill. The Inspector shall be governed by the requirements of the Specifications, and shall forward to the City Engineer whatever written reports are required.
- (f) Any inspection or approval by any representative or agent of the City will not relieve the Contractor of the responsibility of incorporating in the work, only those materials which conform to the Specifications, and any nonconforming materials shall be removed from the site whenever identified.
- (g) The City Engineer and his authorized representatives, shall at all times have access to the work during its construction at shops and yards, as well as at the project site. The Contractor shall provide every necessary facility for ascertaining that the materials and workmanship are in accordance with Plans and Specifications.

SECTION 45 - PROJECT REVIEW

The Contractor shall notify the Inspector and City Engineer upon completion of 20% of the work and thereafter at each 20% increment, for his review of the project progress of architectural work, mechanical work, ventilating and plumbing work and electrical work.

SECTION 46 - FINAL INSPECTION

Upon completion of the work, the Contractor shall notify the Inspector and the City Engineer when a final inspection of the work is desired. Such inspections will be made as soon thereafter as possible. If the work is found to be in compliance with the Plans and Specifications, the Board will furnish the Contractor with a certificate to that effect.

SECTION 47 - DEFECTIVE WORK

No work which is defective in its construction, or deficient in any of the requirements of the Specifications, shall be considered as accepted in consequence of the failure of any employee of the City to point out said defects or deficiency or to order them corrected during construction. The Contractor shall correct any imperfect work whenever discovered, before the final acceptance of the work.

SECTION 48 - USE OF THE STRUCTURE BEFORE ACCEPTANCE

- (a) The City may, at any time, and from time to time, during the performance of the work, enter the structure for the purpose of installing any necessary work by City labor or other contracts and for any other purpose in connection with the installation of facilities. The Contractor shall cooperate with the City and not interfere with other work being done by or on behalf of the City.
- (b) If, prior to completion and final acceptance of all of the work, the City takes possession of any portion of the project with intent of retaining possession thereof, then the Contractor shall be relieved of the responsibility for loss or damage to such portion, other than that resulting from his fault or negligence. Such taking of possession by the City shall not relieve the Contractor from any provisions of this Contract respecting such portion other than to the extent specified in the preceding sentence, nor constitute a final acceptance of such portion.

PAYMENTS

SECTION 49 - CONTRACT PRICE BREAKDOWN

- (a) The Contractor shall submit to the City Engineer for approval, prior to the first partial payment on the project, a complete breakdown of the bid price, by the divisions and principal subdivisions of the Specifications, for use in checking progress and partial payment request.
- (b) Where the Contract involves more than one building, an additional breakdown of the Contract price is required for each building and for yard and street work improvements, in lump sum only.

SECTION 50 - PAYMENTS

- (a) On or about the first of each calendar month, the Contractor shall request payment, on the Contract Payment Request Form supplied by the City, for the work performed prior to such date. Each Payment Request shall be accompanied by the update progress schedule indicating progress achieved to that date.

- (b) Upon approval by the Inspector and the City Engineer of the Contractor's estimate of work completed, the City will make a progress payment to the Contractor equal in amount to the approved estimate less a retention of 10 percent and less the total of all previous payments. Upon completion of 50 percent of the work of the Contract, the City Engineer may at his discretion, reduce the amount of retention for the remainder of the work.
- (c) In preparing estimates, the material delivered on the site, preparatory work done, and the cost of bonds and insurance paid may be taken into consideration.
- (d) Upon completion of the work, the Contractor may request full payment for his work, and after acceptance of the work by the Board, the City will make a final progress payment as described above. The amount retained will continue to be retained until 35 days after the date of acceptance. In case of default by the Contractor, the retention shall be retained by the City, as liquidated damages, as provided in the Section relating to Suspension of Contract.
- (e) At the expiration of thirty-five (35) days from the date of the acceptance and upon receipt from the Contractor of all affidavits and guarantees required by the Specifications, the remainder due the Contractor will be paid by the City.
- (f) If this Contract comprises two or more major units of work readily separable and divisible, and for which separate prices are stipulated in the Contract, the Contractor may make separate requests for progress payment on each such unit, and the City will make such progress payments, acceptance, retention, and final payment in accordance with the procedure specified above for the entire Contract.
- (g) The making of any payment to the Contractor under this Contract shall not relieve the Contractor of all obligation hereunder. The Contractor is obligated to complete the Contract in its entirety and to deliver to the City such completed work, finished product or structure as is specified in the Contract, at the time or times specified, and until this Contract is fully performed by the Contractor and the work, product, or structure produced thereby is accepted by the City, the Contractor shall be obligated to repair, replace, restore, or rebuild any fully or partially completed work or structure, or any materials or equipment required to be provided under the Contract which may be damaged, lost, stolen, or otherwise injured in any way; provided, however, that with respect to any major unit of the type mentioned in this Section, this particular obligation of the Contractor will terminate upon the completion by the Contractor and acceptance by the City of such major unit, and provided, further, that all work, any structure, materials, and equipment covered by any partial payment is made.
- (h) When a "Notice to Withhold" is served upon the City, or the Board, pursuant to the lien statutes of the State of California, to withhold sufficient funds from payments to the Contractor in support of a claim resulting from default by the Contractor in payment for labor or materials used in the prosecution of his Contract, the City will withhold from payments due the Contractor an amount of money equal to the amount

of the claim stated in the "Notice of Withhold", and an additional amount equal to 25 percent of the amount of said claim, to defray any costs of litigation in the event of court action on the claim, for a total withholding of one and one-quarter times in the stated amount of the claim.

- (i) The Contractor will be required to make all monthly requests for payment on the City's Contract Payment Request Form. That form requires that the Contractor certify under penalty of perjury to the following:
 - 1. No workers were required or permitted to work more than eight (8) hours in any one calendar day, except in cases of emergency, and except as provided by law.
 - 2. Not less than the prevailing rates of wages, as set forth in the Contract for this work, have been paid all laborers, workers, and mechanics employed to perform this work.
 - 3. There were no substitutions of subcontractors, no assignment or transferences of Subcontractors or Sub-subcontractors, except as provided by the Board of Public Works.
 - 4. All of the provisions of Los Angeles Administrative Code, Section 10.8, pertaining to non-discrimination in employment have been complied with.
 - 5. That the Record Drawings maintained on the job have been noted with all changes made subsequent to the previous Payment Request.
 - 6. That the Shop Drawings and Wiring Diagrams have been submitted and approved by the Contractor or the Consultant Architect, as applicable.
- (j) The City's approval of the Payment Request shall be contingent upon the current status of the required Record Drawings, Wiring Diagrams and the Progress Photographs.

SECTION 51 - EXTRA WORK AND CHANGES

- (a) Subject to all charter limitations, including those on competitive bidding, the City Engineer at any time during the progress of the work may order alterations in, additions to, deviations or omissions from the work contemplated by the original Plans and Specifications.
- (b) No extra work shall be performed or changed be made unless in pursuance of a written order from the City Engineer stating that the extra work or change is authorized and no claim for an addition to the Contract amount shall be valid unless the extra work or change is so ordered. Each change will be identified by a change request number.
- (c) If any change involves an increase or decrease in the cost of the Contractor's work, the Change Order shall state the amount to be added to or deducted from the Contract amount, and shall also state the additional time, if any, needed for the performance of the work.

- (d) Any change to the Contract amount shall be in a lump sum mutually agreed to by the Contractor and the Board, except that when, in the opinion of the City Engineer, such basis is not feasible, the change to the Contract amount shall be determined upon a cost-plus-percentage basis.
- (e) Each lump sum quotation from the Contractor shall be accompanied by sufficient detailed estimates to permit verification of the total.
- (f) When the work is to be done on a cost-plus-percentage basis, the Contractor shall submit daily statements to the City Engineer, showing all labor, materials, and equipment costs incurred, and upon completion of the work, a summary statement of costs including overhead and profit.
- (g) Estimates for lump sum quotations and accounting for cost-plus-percentage work shall be limited to direct expenditure necessitated specifically by the subject extra work, and shall be segregated as follows:
1. Direct labor (including the itemized time of the job superintendent spent solely on the work of the Change Order) and materials for both temporary and permanent work with proper allowance for salvage of temporary work, and including direct engineering expenses;
 2. Equipment rental or use allowance;
- NOTE: Individual pieces of equipment or tools having a replacement value of \$250 or less whether or not consumed by use shall be considered small tools and no payment will be made therefore.
3. Subcontractor's and Sub-subcontractor's costs; including their overhead and profit.
 4. Social Security and unemployment taxes and other payroll surcharges.
- (h) In addition to the direct cost specified above, the Contractor will be paid a lump sum for his overhead, profit, field office salaries, and expense, supervision not applied solely to the work of the Change Order and Bond. Such lump sum shall conform to the following schedule of percentages of the total amount of the said direct expenditures.

Direct Expenditures	Percentage for Lump Sum Addition
Under \$1,000	20%
\$1,001 to \$20,000	16%
\$20,001 to \$100,000	12%
\$100,001 to \$500,000	10%
\$500,001 to \$1,000,000	8%
\$1,000,001 and greater	6%

- (i) Subcontractors and Sub-subcontractors will be allowed the following percentages for overhead and profit, respectively, on the amount of their direct expenditures.

**Direct Expenditures
on Change Orders**

**Percentage for
Lump Sum Addition**

Under \$1,001	25% for Overhead and Profit
\$1,001 to \$20,000	21.5% for Overhead and Profit
\$20,001 to \$100,000	18% for Overhead and Profit
\$100,001 to \$500,000	14% for Overhead and Profit

- (j) For work performed by a Sub-Subcontractor, the Subcontractor may add 6 percent of the Sub-subcontractor's total for his overhead and profit.
- (k) The basis for determining the cost for Sub-subcontractors shall be the same as for Subcontractors, and no increase shall be allowed, regardless of the number of layers of Subcontractors involved.
- (l) For added or omitted work by Subcontractors, the Contractor shall furnish to the City Engineer the Subcontractor's detailed estimate of the cost for labor, materials, and equipment, including the markup by the Subcontractor for overhead and profit. Such estimate of cost shall be signed by the Subcontractor. The same requirement shall apply to any Sub-subcontractor.
- (m) For added or omitted work furnished by a vendor or supplier, the Contractor shall furnish to the City Engineer, a detailed estimate or quotation of the cost to the Contractor for such work, signed by the vendor or supplier
- (n) Any change in the work involving both extras and credits shall show a net total cost, including subcontracts. Allowances for overhead and profit, as specified hereinabove; shall be applied if the net total cost is an extra; overhead and profit allowances shall not be applied if the net total cost is a credit. The estimated cost of deductions shall be based on labor and material prices on the date the Contract was signed.
- (o) If the Contractor is delayed in completing the work by reason of any change ordered by the City Engineer, the time for completion of the work will be extended by change Order for a period equal to the number of days by which the entire project has been delayed because of the change. The Contractor will not be liable for liquidated damages for this period of time, but the contractor shall have no claim for any other compensation for any such delay, except as hereinbefore provided in this Section.
- (p) In case of failure on the part of the City Engineer and the Contractor to arrive at an agreement on the amount of credit or extra cost for a proposed change to the Plans or Specifications, a Change Order will be processed in the amount believed by the City Engineer to be reasonable, and the Contractor shall proceed with the work. If the Contractor believes that the amount named in the Change Order is not a reasonable payment for the work required, he may file a request for review with the Board of Public Works.

- (g) Any change in the work shall conform to the original Drawings and Specifications insofar as they may apply, without conflict to the conditions involved in the change.
- (r) Payment for additional work or extras, if any, shall become due and payable in accordance with the provision for payment of the Contract price.
- (s) Any changes that are required to accommodate construction due to errors or omissions in the approved Construction Drawings and Construction Specifications prepared by the Contractor shall not be considered as extra work.
- (t) Full rental costs for rented or leased equipment shall not exceed the rates listed in the Rental Rate Blue Book (the Blue Book) published by Dataquest, Inc., Palo Alto, California, as adjusted to the regional area of the work under this Contract. Owned equipment costs shall not exceed the rates listed in the Cost Reference Guide (the CRG) for Construction Equipment, published by Dataquest, Inc., Palo Alto, California. The most recent published edition in effect at the commencement of the actual equipment use shall be used.

a. Leased Equipment

For equipment rented or leased in arm's length transactions from outside vendors, the Contractor shall be paid the actual invoiced or leased rates. Arm's length rental or lease transactions are those in which the firm involved in the rental or lease of such equipment is not associated with, owned by, have common management, directorship, facilities, and/or stockholders with the firm renting the equipment. Submittal by a Contractor of a rental or lease invoice from the lessor will be prima facie proof of compliance with the above. However, such invoices are not conclusive proof; if questioned, the burden of proof remains with the Contractor. In no event shall the leased equipment rate billed to the City be at rates exceeding those prescribed in the following table:

Payment Category	Blue Book	Actual Usage
Less than 8 hours	Hourly Rate	
8 or more hours but less than 7 days	Daily Rate	
7 or more days but less than 30 days	Weekly Rate	
30 days or more	Monthly Rate	

When in Use Actual equipment, use time documented by the Inspector shall be the basis that the equipment was on and utilized at the project site. In addition to the leasing rate and the markup negotiated above, equipment operational costs shall not exceed the estimated hourly operating rate as set forth in the Blue Book. The hours of operation shall be based upon actual equipment usage as recorded by the Inspector. For multiple shift work sequences, the allowable equipment rate shall not exceed fifty percent (50%) of the base rate, for second or third shifts.

Idle equipment is equipment on site and necessary to perform the work under the change but not in actual use. Idle equipment time,

as documented by the Inspector, shall be paid at the rate determined above. Idle time shall include a reasonable time allowance to and from the project site.

b. Owned and Other Equipment

Equipment rates for owned equipment or equipment provided in other than arm's length transactions will not exceed the total hourly cost listed in the Cost Reference Guide. Except as noted herein, below, this equipment hourly rate plus the estimated operating cost per hour from the Cost Reference Guide will be paid for each hour the equipment actually performs work. Daily records listing the equipment units and their respective operators, identification code, and actual usage, as certified at the end of each workday (or work shift if the work is being performed in multiple work shift sequence) by the Inspector shall be the record upon which actual equipment use shall be based. For multiple shift work sequences, the allowable equipment rate shall not exceed the hourly depreciation and operating costs listed in the Cost Reference Guide, for second or third shifts.

Equipment necessary to be on the site to complete the work, but not in actual use, shall not exceed fifty percent (50%) of the ownership hourly rate set forth in the Cost Reference Guide, provided that its presence and necessity on the site has been documented by the Inspector, and further provided that the equipment was idled solely by actions of the City. Idle equipment time will only be paid as a function of delays specifically directed or caused by the City's actions. In no event shall the idle time claimed in a day for a particular piece of equipment exceed the normal work schedule established for the project (usually eight (8) hours per day or forty (40) hours per week, and excluding Saturdays, Sundays, and Holidays). For multiple shift work sequence, the allowable idle equipment rate shall not exceed fifty percent (50%) of the hourly depreciation cost listed in the Cost Reference Guide, for second or third shifts.

c. Equipment Shipment and Set Up Costs

Documented and actual equipment shipment and set up costs shall be paid for, per Paragraph (c)(3)C of this Section.

- d. In the event that a piece of equipment used on a Change Order is not listed in the Blue Book or the CRG, costs may be derived from the AGC Equipment Ownership Guide, the Associated Equipment Dealers Guide, or the Equipment Rate Guide published by the U.S. Army Corps of Engineers.

SECTION 52 - UNFORESEEN CONDITIONS

- (a) Increased cost to the Contractor in the performance of the work due to any of the following conditions will be paid for in the manner described hereinabove for "Extra Work and Changes":
1. Underground conditions materially different from those shown on the Plans or indicated in the Specifications.

2. Underground man-made structures which could not reasonably have been discovered by the Contractor during the period of advertising for bids.
 3. Existing fill, unstable soil, or soil that has been disturbed through no fault of the Contractor, any of which requires removal and replacement, compaction, or additional concrete and back-filling.
 4. Unknown physical conditions at the job-site of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work of the character provided in this Contract.
- (b) Immediately upon discovery of any of the conditions listed in (a) above, the Contractor shall stop all work thereon and notify the Inspector. The unforeseen condition will be reviewed by the City Engineer and the Contractor shall not proceed with the work until the Inspector has so ordered.
- (c) No claim of the Contractor under this clause shall be allowed unless the Contractor has given the required notice in (b) above, provided however, the time prescribed therefore may be extended by the City Engineer.

SECTION 53 - SUSPENSION OF WORK

- (a) If the work of the Contract is suspended or delayed, the Contractor shall so notify the Inspector within 24 hours after the start thereof. If the Contractor is entitled to reimbursement for such suspension or delay, as specified hereinafter, Contractor shall submit a completely detailed statement of the costs thereof to the City Engineer within 15 days after the termination thereof.
- (b) If the work of the Contract is suspended or delayed through no fault of the City, all expenses and losses incurred by the Contractor shall be borne in full by the Contractor.
- (c) If the work of the Contract is suspended or delayed by an act of the City, or by failure of the City to furnish required information or if the critical path is affected by the suspension and the Contractor thereby incurs expenses or sustains losses which could not have been avoided by the judicious handling of forces and equipment, and if by a diligent prosecution of the work Contractor could not have completed the work before such suspension, the Contractor will be paid such amount as the Board may find to be fair and reasonable compensation for such part of the Contractor's actual loss as was unavoidable and could not have been reduced. In no case shall any compensation be made to cover any loss other than actual cash, paid for wages, rental of equipment, and materials used in protection of the work, all of which must be supported by satisfactory written evidence. Such wages shall not include the wages or salary of any individual not necessary to the protection of the project.

SECTION 54 - SUSPENSION OF CONTRACT

- (a) If the Contractor should be adjudged bankrupt; or if Contractor should make a general assignment for the benefit of his creditors; or if a receiver should be appointed on account of insolvency; then in any such case the Board shall have the power to suspend the operations of the Contract.
- (b) Should the Contractor fail to begin work within the time required in such a manner as to ensure full compliance with the Contract within the time limit; or if the work to be done under Contract be abandoned; or if at any time the City Engineer is of the opinion that the said work is unnecessarily or unreasonably delayed; or that said Contractor is willfully violating any of the terms of the Contract; or is not executing the Contract in good faith; or is not following the instructions of the City Engineer as to additional force necessary in the opinion of the City for its completion within the required time; or if at any time the Contractor is not properly carrying out the provisions of the Contract in their true intent and meaning, then in any such case, notice thereof in writing will be served upon the Contractor, and should the Contractor neglect or refuse to provide means for a satisfactory compliance with the direction of the City Engineer within the time specified in such notices, the Board shall have the power to suspend the operations of the Contract.
- (c) Upon receiving notice of such suspension, said Contractor shall discontinue said work or such parts of it as the Board may designate. Upon such suspension, the Board may employ other parties to carry on the Contract to completion; employ the necessary workers, substitute other machinery or materials, purchase the materials contracted for in such manner as the Board may deem proper, or hire such force and buy such machinery, tools, appliances, materials, and supplies and equipment at the Contractor's expense, as may be necessary for the proper conduct of the work and for the completion thereof. Any excess of costs arising there from over and above the Contract price will be charged against the Contractor and his sureties, who will be liable therefore.
- (d) In the event of such suspension, all moneys due the Contractor or retained under the terms of the Contract shall be forfeited to the City; but such forfeiture will not release the Contractor or Contractor's sureties from liability for failure to fulfill the Contract. The Contractor and his sureties will be credited with the amount of money so forfeited toward any excess of cost over and above the Contract price arising from the suspension of the operations of the Contract and the completion of the work by the City, as above provided, and the Contractor will be so credited with any surplus remaining after all just claims for such completion have been paid.
- (e) In lieu of the exercise of the authority hereinabove given, to employ workmen, purchase tools and materials, and complete the work, said City reserves the right and option instead thereof, to annul and cancel the Contract and to relet the work or any part thereof, and said Contractor shall not be entitled to any claim for damages on account of such

annulment nor shall such annulment affect the right of said City to recover damages which may arise from such failure on the part of said Contractor, to fulfill the terms of the Contract. And in case of such annulment, all moneys due said Contractor, or retained under the terms of the Contract, shall be forfeited to said City; but such forfeiture shall not release said Contractor or Contractor's sureties from liability for failure to fulfill the Contract; and said Contractor and Contractor's sureties shall be credited with the amount of moneys so forfeited toward any greater sum they may become liable for to said City on account of the default of said Contractor.

- (f) In determination of the question whether there has been such non-compliance with the Contract as to warrant the suspension or annulment thereof, the decision of the Board will be binding on both parties.

SECTION 55 - ASSIGNMENT

The Contractor shall not assign any of Contractor's rights under the Contract (including right to any payment) or substitute any portion of the Contract without consent of the Board in writing.

SECTION 56 - SUBLETTING

- (a) The Contractor shall submit the names of all Subcontractors and Sub-subcontractors proposed to perform work on the project to the City Engineer's, or the Board's approval prior to commencement of any work on the Contract, but such approval shall not entitle Subcontractors to recognition for any direct or contractual relationship with the City, nor shall it constitute approval of the use of any materials other than those specified.
- (b) Upon receipt from the Contractor of the names of proposed Subcontractors and Sub-subcontractors, the City Engineer will investigate the record, ability and capacity of each, and will issue written approval if found to be in the best interest of the City.
- (c) The Contractor shall be responsible for all acts of Subcontractors and all Contract work, regardless of any Subcontracts. All interests of the City in work of Subcontractors shall be coordinated through the Contract.
- (d) If a Subcontractor or Sub-subcontractor has been rejected by the City after investigation by the City Engineer, the Contractor shall furnish the City Engineer with additional names for his approval.

SECTION 57 - INDEMNIFICATION AND INSURANCE REQUIREMENTS FOR CONSTRUCTION CONTRACTORS

- (a) Indemnification: Except for the active negligence or willful misconduct of City, Contractor undertakes and agrees to defend, indemnify and hold harmless City and any and all of City's Boards, Officers, Agents, Employees, Assigns, and Successors in Interest from and against all suits and causes of action, claims, losses, demands and expenses, including, but not limited to, Attorney's fees and cost of litigation, damage to any person, including the Contractor's employees and agents,

or damage to or destruction of property of either party hereto or of third parties, arising in any manner by reason of the negligent acts, errors, omissions or willfull misconduct incident to the performance of this Agreement on the part of the Contractor or Subcontractor of any tier.

It is agreed that such defense and indemnity shall extend to the City's Architect/Engineer or other Design Consultant providing services under written agreement with the City covering any portion of the Project. Provided, however, that the Design Consultant shall be solely responsible for the enforcement of any request made by said Consultant for indemnification or defense by Contractor. It is further provided that City shall have no liability whatsoever for any failure of Contractor to comply with any request from the Consultant for indemnity or defense.

It is further agreed that the defense and indemnity obligations of the Contractor under this paragraph shall not extend to the liability of the Design Consultant or its agents, employees or sub-consultants, arising as a result of such indemnitee's own active negligence, errors or omissions or from (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications, or (2) the giving of or failure to give directions or instructions by the indemnitee provided that such giving or failure to give is the primary cause of the damage or injury.

(b) Insurance

1. General Conditions: During the term of this agreement and without limiting Contractor's indemnification of City, Contractor shall provide and maintain at its own expense during the term of this Agreement insurance having the limit customarily carried and actually arranged by the Contractor, but not less than the amounts and types listed on the "Insurance Requirements" form attached hereto covering its operations hereunder subject to the following conditions:
 - a. Insurance Requirements: All insurance required hereunder shall conform to City requirements established by charter, ordinance or policy and shall be filed with the Office of the City Attorney for its review in accordance with Los Angeles Administrative Code Sections 11.47 through 11.56.
 - b. Additional Insured/Loss Payee: City, its Boards, Officers, Agents, Design Consultants, if any, and Employees shall be included as additional insureds in all liability insurance policies which may be required except: Workers' Compensation/Employer's Liability, Professional Errors and Omissions, second-party Legal Liability coverages (such as Fire Legal) and Owners' and Contractors' Protective Liability, in which latter case the City shall be the Named Insured. City shall be named Loss Payee As Its Interest May Appear in all applicable property, fidelity or surety coverages which may be required.

- c. Primary Insurance: Such insurance shall be primary with respect to any insurance maintained by City and shall not call on City's insurance program for contributions.
 - d. Admitted Carrier/Licensed California Broker: Insurance shall be obtained from brokers or carriers authorized to transact insurance business in California.
 - e. Approval of Insurance: Evidence of insurance shall be submitted to and approved by City Attorney and City Risk Manager prior to commencement of any work or tenancy under this Agreement.
 - f. Cancellation: With respect to the interests of the City, such insurance shall not be cancelled or materially reduced in coverage or limits except after thirty (30) days written notice by receipted delivery (e.g., certified mail-return receipt, courier or telegram) has been given to City Attorney Insurance & Bonds, 1800 City Hall East, 200 North Main Street, Los Angeles, CA 90012-4168.
 - g. Severability of Interest: Except with respect to the insurance company's limits of liability, each liability insurance policy shall apply separately to each insured against whom claim or suit is brought. The inclusion of any person or organization as an insured shall not affect any right which such person or organization would have as a claimant if not so included.
 - h. Acceptable Evidence: The appropriate "City Special Endorsement Forms" are the preferred forms of evidence of insurance. Alternatively, Contractor may submit two (2) certified copies of the policy or other evidence acceptable to the City Attorney and City Risk Manager containing language which complies with subparagraphs (a) through (g) above. With respect to Professional Liability Insurance, either a signed copy of the Policy Declarations Page or a letter from Contractor's insurance broker certifying coverage, together with a 30-day cancellation notice endorsement in favor of the City as specified in subparagraph (f), will satisfy this requirement.
 - i. Renewal: Once the insurance has been approved by City, evidence of renewal of an expired policy may be submitted on a manually signed renewal endorsement form. If the policy or carrier has changed, however, new evidence as specified in Paragraphs (a) through (h) above, must be submitted.
2. Workers' Compensation: By signing this Agreement, Contractor hereby certifies that it is aware of the provisions of Section 3700 et seq., of the Labor Code which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and that it will comply with such provisions at all such times as they may apply during the performance of the work pursuant to this Agreement.

3. Aggregate Limits/Blanket Coverage: If any of the required insurance coverages contain aggregate limits, or apply to other operations or tenancy of Contractor not related to this agreement, Contractor shall give City prompt, written notice of any incident, occurrence, claim, settlement or judgment against such insurance which in Contractor's best judgment may diminish the protection such insurance affords City. Further, Contractor shall immediately take all reasonable and available steps to restore such aggregate limits or shall provide other insurance protection for such aggregate limits, City may at its option, specify a minimum acceptable aggregate for each line of coverage required.
4. Self-Insurance and Self-Insured Retentions: Self-insurance programs and self-insured retentions in insurance policies are subject to separate approval by City upon review of evidence of Contractor's financial capacity to respond. Additionally, such programs or retentions must provide City with at least the same protection from liability and defense of suits as would be afforded by first-dollar insurance.
5. Modification of Coverage: City reserves the right at any time during the term of this Agreement to change the amounts and types of insurance required hereunder by giving Contractor ninety (90) days advance written notice of such change. If such change should result in substantial additional cost to Contractor, City agrees to negotiate additional compensation proportional to the increased benefit to City.
6. Failure to Procure Insurance: The required coverages and limits are subject to availability on the open market at reasonable cost as determined by City. Non-availability or non-affordability must be documented by a letter from Contractor's insurance broker or agent indicating a good faith effort to place the required insurance and showing as a minimum the names of the insurance carriers and the declinations or quotations received from each.

Within the foregoing constraints, Contractor's failure to procure or maintain required insurance or a self-insurance program during the entire term of this Agreement shall constitute a material breach of this Agreement under which City may immediately suspend or terminate this Agreement or, at its discretion, procure or renew such insurance to protect City's interests and pay any and all premiums in connection therewith, and recover all monies so paid from Contractor.

7. Underlying Insurance: Contractor shall be responsible for requiring indemnifications and insurance as it deems appropriate from its employees receiving mileage allowance, consultants, agents and subcontractors, if any, to protect Contractor's and City's interests, and for ensuring that such persons comply with any applicable insurance statutes. Contractor is encouraged to seek professional advice in this regard.

CITY AND STATE REQUIREMENTS

SECTION 58 - LENGTH OF WORKDAY AND WORK WEEK

- (a) Eight (8) hours of labor shall constitute a calendar day's work for employees of Contractors under this Contract, to be paid for at not less than the basic wage rate for the first eight hours work of each day.
- (b) When work in excess of 8 hours per day, or 40 hours during any one week is performed, wages for all hours over 8 hours in any one day or over 40 hours during any one week shall be paid at not less than 1 1/2 times the basic wage rate, as provided in Division 2, Part 7, Chapter 1, Article 3 of the Labor Code of California.

SECTION 59 - PREVAILING WAGE

- (a) The Board of Public Works has obtained a schedule of the prevailing hourly rate in dollars and details pertinent thereto for each craft or type of workers or mechanic needed to perform the work, from the Department of Industrial Relations. Said Schedule is on file with the Board. The Contractor shall post at the job-site in a conspicuous place available to all employees and applicants for employment copies of the prevailing wage rates provided by the City for each craft; classification; or type of workers needed to execute the Contract.
- (b) The Contractor shall pay all workers under the Contract at least the prevailing wage determined in Section 58(a) hereof, and shall keep the schedule referred to above, posted at the job-site at all times during the performance of the Contract.
- (c) The Contractor, all Subcontractors, and Sub-subcontractors shall comply with the provisions of Division 2, Part 7, Chapter 1, Article 2 of the California Labor Code.

SECTION 60 - RESIDENT LABOR

Section deleted.

SECTION 61 - COMPLIANCE WITH EMPLOYMENT REGULATIONS

Section deleted.

SECTION 62 - PAYMENT OF EMPLOYEES

The Contractor and each of all Subcontractors shall pay each of its employees engaged in work on the project under this Contract in compliance with the State Labor Code.

SECTION 63 - CONVICT-MADE MATERIALS

No materials manufactured or produced in a penal or correctional institution shall be incorporated in the project under this Contract.

SECTION 64 - EXEMPTION FROM FEDERAL EXCISE TAX

- (a) Purchase of materials and equipment which will be incorporated or installed permanently in the Contract work are exempt from Federal excise tax in effect at the time of purchase, as applicable. Prices included in the Contract amount shall reflect such exemptions. A Federal Tax Exemption Certificate will be furnished by the City, on request, as acknowledgement that materials and equipment for which exemption is requested by the Contractor, is valid where provided for the exclusive use of the City.
- (b) Lists of exempt articles provided by the Contractor and Subcontractor shall be submitted to the City by the Contractor. Purchases of materials and equipment which will be used in the operations of the Contractor or Subcontractors and not incorporated in the Contract work are not exempt from excise tax.

SECTION 65 - SALES OR USE TAX

Purchase of materials and equipment which will be incorporated or installed permanently in the Contract work, or which will be used in the operation of the Contractor or Subcontractors or Sub-subcontractors, and not incorporated in the Contract work, are not exempt from City of Los Angeles and California State Sales or Use Taxes in effect at the time of purchase, as applicable.

SECTION 66 - NON-DISCRIMINATION IN EMPLOYMENT

- (a) The Contractor shall comply with all of the provisions of Los Angeles Administrative Code Section 10.0 through 10.13, Mandatory Provision pertaining to Non-Discrimination in Employment, which provides the procedure pertaining to Non-Discrimination in Employment in the performance of City Contracts and providing the procedure for the administration of such contractual provisions, including employment, the posting of notice in conspicuous places, solicitation or advertisements for employees, relations with labor unions, access to the Contractor's records, possibility of declaration of breach of Contract or delinquency, relationship with and responsibility for Subcontracts.
- (b) The Contractor shall submit Monthly Ethnic Reports to the Board of Public Works indicating the number of employees in the various work categories and ethnic groups, on forms furnished by the City.
- (c) **Non-Discrimination Clause:** The Contractor agrees and obligates himself not to discriminate during the performance of this Contract against any employee or applicant for employment because of employees or applicants race, religion, national origin, ancestry, sex, age or physical handicap. Provide all Subcontractors or Sub-subcontractors awarded under this Contract with a like non-discrimination clause.

SECTION 67 - APPRENTICE UTILIZATION

Any Contract awarded hereunder will require the Contractor to comply with the provisions of the Labor Code, State of California. Section 1777.5 relating to apprentice employment and training; and will require the Prime Contractor to assume full responsibility for compliance with said Section with respect to

all Apprenticable Occupations upon the project. Compliance with said Section 1777.5 of the Labor Code is not required for Public Works Contracts involving less than \$30,000 or less than 20 working days.

SECTION 68 - BUSINESS TAX REGISTRATION CERTIFICATES

- (a) The Contractor represents that it has obtained and presently holds the Business Tax Registration Certificate(s) required by the Los Angeles City's Business Tax Ordinance (Article 1, Chapter 2, Section 21.00 and following, of the Los Angeles Municipal Code). The Contractor shall maintain, or obtain as necessary, all such certificates required of it under said Ordinance and shall not allow any such certificate to be revoked or suspended.
- (b) The City of Los Angeles requires all firms that have business activity within the City of Los Angeles to pay City Business Taxes. Each firm or individual that pays the Business Tax receives a Business Tax Registration Certificate (BTRC) Number.
- (c) Beginning October 14, 1987, payments for goods or services will be withheld unless proof of tax compliance is provided to the City. All firms and individuals that do business with the City of Los Angeles will be required to provide a BTRC Number or an Exemption Number as proof of compliance with Los Angeles City Business Tax requirements in order to receive payment for goods or services.
- (d) The Tax and Permit Division of the City Clerk's Office has the sole authority to determine whether a firm is covered by business tax requirements. Those firms not required to pay will be given an Exemption Number.
- (e) If you do not have a BTRC Number, contact the Tax and Permit Division at the nearest office listed below.

Los Angeles City Hall	201 N. Main St. Rm. 101	(213) 485-7945
Van Nuys Civic Center	14401 Erwin Mall	(213) 989-8531
W.L.A. City Hall	1645 Corinth Ave. Rm. 104	(213) 312-8325
Hollywood Office	6501 Fountain Ave.	(213) 485-3935
San Pedro City Hall	638 S. Beacon St. Rm. 303	(213) 548-7646
Westchester Muni. Bldg.	7166 W. Manchester Ave. Rm 9	(213) 670-3080
Watts City Hall	1513 E. 103rd St.	(213) 566-5331

SECTION 69 - LISTING OF SUBCONTRACTORS

- (a) General: All Contracts let by the Board of Public Works for the construction of any public work or improvement within the City of Los Angeles will require the submittal of a list of Subcontractors with the bid.
- (b) Definitions: For the purposes of this Section of the Specifications, "Sub-contractor" shall mean a Contractor within the meaning of the provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code of the State of California, who contracts directly with the Prime Contractor. "Prime Contractor" shall mean the Contractor who contracts directly with the awarding authority.

"Board" shall mean the Board of Public Works as the awarding authority. "Engineer" shall mean the City Engineer, Bureau of Engineering, or other person designated by the Board, acting either directly or through authorized agents.

- (c) **Listing of Subcontractors:** Every person making a bid or offering to perform the work shall file with the bid:
1. The name, address, telephone number, MBE/WBE status and kind of work each Subcontractor who will perform or render service in an amount in excess of \$10,000.
 2. MBE/WBE Subcontractors regardless of subcontract amount.
 3. A description of that portion of the work to be performed by each such Subcontractor. Only one Subcontractor for each portion of the work shall be listed. Failure of a bidder to specify a Subcontractor for any portion of the work in an amount in excess of \$10,000 shall constitute agreement by said bidder that it is fully qualified to perform that work and shall perform it with its own forces. Its "own forces" shall be construed to include only workers employed and paid directly by the Prime Contractor and equipment owned or rented by the Prime Contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the Prime Contractor. A Prime Contractor violating any provisions of this subsection shall be penalized as set forth in Section (h).
- (d) **Circumvention:** Circumvention by a Prime Contractor of the Subcontractor listing requirements, by the device of listing another Contractor who will in turn sublet portions constituting the majority of the work covered by the Prime Contractor shall be considered a violation and shall subject such Prime Contractor to the penalties set forth herein.
- (e) **Substitution:** No Prime Contractor whose bid is accepted may substitute any person as Subcontractor in place of the Subcontractor listed in the original bid or offer except in the following instances:
1. When the Subcontractor listed in the bid after a reasonable opportunity to do so fails or refuses to execute a written Contract when such written Contract, based upon the general terms, conditions, Plans and Specifications for the project involved or the terms of such Subcontractor's written bid, is presented to it by the Prime Contractor.
 2. When the listed Subcontractor becomes bankrupt or insolvent.
 3. When the listed Subcontractor fails or refuses to perform its Subcontract.
 4. When the listed Subcontractor fails or refuses to meet the bond requirements of the Prime Contractor as set forth herein under the Subcontractors Performance Bonds.
 5. When the Contractor demonstrates to the satisfaction of the Board that the Subcontractor was listed by inadvertent clerical error.

6. When the listed Subcontractor is not properly licensed pursuant to the Contractors License Law.
7. When the Board or its duly authorized officer determines that the work being performed by the listed Subcontractor is substantially unsatisfactory and not in substantial accordance with the Plans and Specifications or the listed Subcontractor is substantially delaying or disrupting the progress of the work.
8. When the listed Subcontractor fails to submit an Affirmative Action Plan acceptable to the Board.

or

Any Subcontractor allowed to be substituted for another shall meet the same MBE/WBE status requirements that were required of the replaced Subcontractor.

9. No Subcontractor shall be substituted for work which the Prime Contractor agrees to perform in excess of the amount specified above in Section 69(c)3 by failure to designate a Subcontractor therefore except in the performance of "Change Orders" causing changes or deviations from the original Contract or in cases of public emergency or necessity and only after a finding reduced to writing by the Board setting forth the facts constituting the emergency or necessity.

The Prime Contractor, as a condition of asserting a claim of inadvertent clerical error in a listing of a Subcontractor, shall within two working days after the time of the prime bid opening by the Board give written notice to both the Subcontractor its claims to have listed in error and the intended Subcontractor, who had bid to the Prime Contractor in prior to bid opening. Any listed Subcontractor who has been notified by the Prime Contractor in accordance with the provisions of this Section as to an inadvertent clerical error, shall be allowed six working days from the time of the prime bid opening within which to submit to the Board and to the Prime Contractor written objection to the Prime Contractor's claim of inadvertent clerical error. In all other cases, the Prime Contractor must make a request in writing, to the Board, for the substitution of Subcontractors, giving reasons therefore. The Board shall mail a written notice to the listed Subcontractor giving reasons for the proposed substitutions. Such notice shall be served by certified or registered mail to the last known address of such Subcontractor. The listed Subcontractor shall have five working days from the date of mailing of such notice within which to file with the Board, written objections to the substitution and the notice itself shall so state.

Failure to file written objections within the times specified herein shall constitute a waiver of objection to the substitution by the listed Subcontractor and, where the ground for substitution is an inadvertent clerical error, shall be primary evidence of an agreement by the listed Subcontractors that an inadvertent clerical error was made.

If written objections are filed, the Board shall give five working days' notice in writing to the Prime Contractor and to the listed Subcontractor of a hearing by the Board on the Prime Contractor's request for

substitution. Any determination made, shall be based on the facts contained in declarations submitted under penalty of perjury, upon testimony under oath, subject to cross-examination, and upon any other relevant evidence. With respect to requests, for substitution upon submission of affidavits by the Prime Contractor and the intended Subcontractor that an error was, in fact, made and:

1. Submission of a similar affidavit by the Subcontractor listed in error; or
2. Failure to file written objection, as provided herein, by the Subcontractor listed in error; or
3. A determination after hearing that the listed Subcontractor was listed in error.

The determination by the Board shall be final.

- (f) Subcontractor's Performance Bonds: In the event the Subcontractor submitting a bid to a Prime Contractor does not, upon the request of the Prime Contractor and at the expense of the Prime Contractor at the established charge or premium therefore, furnish to such Prime Contractor a bond, or bonds, issued by an admitted surety wherein the Prime Contractor shall be named the obligee, guaranteeing prompt and faithful performance of such Subcontract and the payment of all claims for labor and materials furnished or used in and about the work to be performed and performed under such Subcontract, the Prime Contractor may reject such bid and make a substitution of another Subcontractor subject to the provisions herein. Such bond, or bonds may be required at the expense of the Subcontractor only if the Prime Contractor in its written or published request for sub-bids (1) specified that the expense for such bond, or bonds, shall be borne by the Subcontractor and (2) clearly specified the amount and requirements of such bond, or bonds.
- (g) Assignment: No Contractor shall permit any Subcontractor to be voluntarily assigned or transferred or allow it to be performed by a Subcontractor other than the original Subcontractor listed on the original bid without the consent of the Board.
- (h) Penalties: A Contractor violating any provisions of this Section shall be deemed in violation of the Contract and the City may at its discretion do the following:
1. Cancel the Contract.
 2. Assess the Contractor a penalty of not more than 10 percent of the Subcontract involved.
- NOTE: In any of the proceeding under this Subsection, the Contractor shall be entitled to a public hearing and to five (5) days notice of the time and place thereof.
- (i) Submittal: Before commencing any work, the Contractor shall submit for approval to the Engineer and Bureau of Contract Administration, the

name, address and telephone number and contract amount of all Subcontractors and Sub-subcontractors and a description of each portion of the work to be subcontracted."

- (j) Inactive License Holders or Unlicensed Contractors: Contractors utilizing inactive license holders or unlicensed Contractors are in violation of the State Business and Professions Code, Section 7117.5 and 7118 respectively. Violation of these sections may result in the Board declaring the bid to be non-responsive. The City will report all violations to the Registrar, Contractor's State License Board, 3132 Bradshaw Road, Sacramento, California."

SECTION 70 - SUBSTITUTION OF SECURITIES

- (a) The Contractor has the option, at its expense, to substitute for any money being withheld by the City Securities equivalent to the amount being withheld. Securities eligible for such substitution are bank or savings and loans certificates of deposit or such securities which are eligible for investment pursuant to Government Code Section 16430. As to any such security or securities so substituted for monies withheld, the Contractor shall be the beneficial owner of same and shall receive any interest thereon.
- (b) Such security shall, at the request and expense of the Contractor, be deposited with the City or with a State or Federally Chartered Bank as the escrow agent who shall pay such monies to the Contractor upon notification by the City expiration of 35 days from the date of acceptance of the work by the Board, or as prescribed by law, provided, however, that there will be a continued retention of the necessary securities to cover such amounts as are required by law to be withheld by properly executed and filed notices to stop payment, or as may be authorized by the Contract to be further retained.
- (c) Any escrow agreement entered into pursuant to this provision shall contain as a minimum, the following provisions:
1. The amount of securities to be deposited;
 2. The terms and conditions of conversion to cash in case of the default of the contractor; and
 3. The termination of the escrow upon completion of the Contract and the other requirements as hereinabove provided.

SECTION 71 - NOTIFICATION OF HAZARDOUS SUBSTANCES

The Contractor's attention is called to the provisions of the California Administrative Code, Title 8, Industrial Relations, General Industry Safety Orders, particularly Section 5194(e); and to the City of Los Angeles Hazard Communication Program, particularly Part 4 and the appendices thereto.

The existing facilities at the San Fernando Valley Shop and Warehouse may contain asbestos, PCB's, corrosives, carcinogens, or other hazardous materials otherwise not referred to in the Contract drawings and specifications. Should the Contractor or any of the Contractor's Subcontractors and

Sub-subcontractors while performing work on or to have reason to believe that any hazardous material not indicated in the Contract Documents, is present, the Contractor shall stop the work and immediately notify the City Engineer. Removal and disposal of the hazardous material or substances will be done by and at the expense of the City or by "Change Order".

SECTION 72 - ADJUSTMENT OF CONTRACT TIME ONLY

For all Change Orders related to the removal and disposal of Hazardous Materials or Substances for which a compensable time extension of the Contracted Work is justified, but for which there is no change in the "Scope of Work" under this Contract, the amount of the Change Order shall consist of the following direct elements:

1. The Contractor shall quote a unit price for such work on an agreed upon unit basis.
2. The resulting direct costs incurred due to the time extension, to the extent provided for under General Provisions Section 53 - SUSPENSION OF WORK.
3. Daily Field Overhead Rate as quoted by the Contractor, multiplied by the number of days the Contract time is extended, which costs shall constitute the full extent of overhead cost owed to the Contractor.

There shall be no duplications of costs in the above, elements, no profit shall be allowed. The derivation of an extended home office overhead rate of the Contractor and its applications to Contract time extensions shall not be allowed under this Contract."

In the event that the Contractor is delayed in the ultimate completion of the entire Contracted Work solely because of such conditions, the Contractor shall be entitled to an extension of contracted time in and the waiving of liquidated damages during the period of time occasioned by the delay.

For new construction work and for all Contractor-furnished supplied and equipment that may contain hazardous materials, the Contractor shall develop and implement a written hazard communication program for Contractors employees in accordance with the State's Administrative Code and the City's Hazard Communication Program. The City will cooperate by providing the Contractor, upon request, with copies of available material Safety Data Sheets (MSDS) covering hazardous materials identified by the Contractor that are encountered in existing facilities during the course of the work. For hazardous materials for MSDS are not currently available at the City, the Contractor shall develop and provide the appropriate MSDS.

The Contractor's basic written Hazards Communication Program shall be submitted to the City Engineer for review and approval prior to start of hazardous materials removal work at the job-site and shall be revised and kept current as required by the continuing progress of the removal work. All provisions concerning MSDS for identified hazardous materials shall be met before the hazardous material is delivered to the job-site.

The City Engineer shall be provided with seven (7) copies of the Contractor's written Hazard Communications Program, Contractor provided MSDS and all revisions and modifications thereto.

REQUIREMENTS

for Contractors, Vendors, Lessees and Permittees doing business with the City of Los Angeles
(FOR INFORMATION ONLY - DO NOT RETURN THIS PAGE TO THE CITY)

Name: TO BIDDERS Date: March 25, 1991

Agreement/Reference: REPLACEMENT OF UNDERGROUND STORAGE TANKS AT
SAN FERNANDO VALLEY SHOP AND WAREHOUSE

Evidence of coverages checked having as a minimum the limits shown must be submitted and approved prior to occupancy/start of operations. Amounts shown are Combined Single Limit. Split limits may be substituted if the total per occurrence equals or exceeds the CSL amount.

☒ Workers' Compensation (statutory) / Employer's Liability \$ 1,000,000

- | | |
|---|---|
| <input type="checkbox"/> Broad Form All States Endorsement | <input type="checkbox"/> Jones Act |
| <input type="checkbox"/> Voluntary Compensation Endorsement | <input checked="" type="checkbox"/> <u>Waiver of Subrogation in</u> |
| <input type="checkbox"/> Longshore and Harbor Workers' Compensation Act | <u>favor of the City</u> |

☐ Aircraft Liability \$ _____

☐ Aviation/Airport Liability \$ _____

☒ General Liability \$ 1,000,000

☒ Automobile Liability \$ 1,000,000

- | | |
|---|---|
| <input type="checkbox"/> Passenger Liability (per seat) \$ _____ | <input type="checkbox"/> Explosion Hazard |
| <input checked="" type="checkbox"/> Premises and Operations | <input checked="" type="checkbox"/> Collapse/Underground Hazard |
| <input checked="" type="checkbox"/> Contractual Liability | <input type="checkbox"/> Garagekeeper's Legal Liability |
| <input checked="" type="checkbox"/> Independent Contractors | <input type="checkbox"/> Hangarkeeper's Legal Liability |
| <input checked="" type="checkbox"/> Products/Completed Operations | <input checked="" type="checkbox"/> Owned Automobiles |
| <input type="checkbox"/> Broad Form Property Damage | <input checked="" type="checkbox"/> Nonowned/Hired Automobiles |
| <input type="checkbox"/> Personal Injury | <input type="checkbox"/> Hookup (limited) |
| <input type="checkbox"/> Broad Form Liability Endorsement | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Watercraft Liability | |
| <input type="checkbox"/> Incidental Medical Malpractice | |

☐ Professional Liability (Errors and Omissions) \$ _____

Discovery period: _____

☐ Property Insurance \$ _____ ☐ Fine Arts Floater \$ _____ ☐ Fire Legal Liability \$ _____

- | | | | |
|---|---|--|--|
| <input type="checkbox"/> % Co-Insurance | <input type="checkbox"/> Actual Cash Value | <input type="checkbox"/> Replacement Value | <input type="checkbox"/> Agreed Amount |
| <input type="checkbox"/> All Risk Coverage | <input type="checkbox"/> Boiler & Machinery | | |
| <input type="checkbox"/> Fire and Extended Coverage | <input type="checkbox"/> Debris Removal | | |
| <input type="checkbox"/> Vandalism & Malicious Mischief | <input type="checkbox"/> Sprinkler Leakage | | |
| <input type="checkbox"/> Flood \$ _____ | <input type="checkbox"/> Windstorm | | |
| <input type="checkbox"/> Earthquake \$ _____ | <input type="checkbox"/> _____ | | |

☐ Crime Insurance \$ _____

- | | |
|---|--|
| <input type="checkbox"/> Comprehensive Dishonesty Disappearance & Destruction | <input type="checkbox"/> Blanket Crime |
|---|--|

☐ Fidelity Bond \$ _____

- | | | |
|---|---|--------------------------------|
| <input type="checkbox"/> Blanket Position | <input type="checkbox"/> Commercial Blanket | <input type="checkbox"/> _____ |
|---|---|--------------------------------|

☐ Owner's Protective Liability \$ _____

☐ Ocean Marine Liability \$ _____ ☐ Ocean Cargo \$ _____

- | | | |
|---|--|--|
| <input type="checkbox"/> Protection & Indemnity | <input type="checkbox"/> Jones Act | <input type="checkbox"/> Inchmaree |
| <input type="checkbox"/> Running Down Clause | <input type="checkbox"/> Wharfinger's Liability | <input type="checkbox"/> Charterer's Legal Liability |
| <input type="checkbox"/> Pollution | <input type="checkbox"/> Ship Repairer's Liability | <input type="checkbox"/> _____ |

Notes: _____

DIVISION 1A
GENERAL REQUIREMENTS

1.00 - GENERAL

1.01 - GENERAL SCOPE OF WORK:

(a) **Work in This Contract:** All labor, materials, and equipment necessary for the removal and replacement of underground storage tanks at the job-site as noted on the Contract Drawings and in these Specifications, including but not limited to the following:

1. Removal and disposal of existing underground oil storage tanks, piping, leak detection monitoring system, transfer pump and waste oil sump.
2. New 1000 gallon hydraulic oil tank.
3. New 1000 gallon motor oil tank.
4. New 1000 gallon waste oil tank.
5. New leak detector and monitoring equipment.
6. Piping and accessories.
7. Concrete paving repairs.

(b) **Work Not in This Contract:** All work or equipment indicated on the Drawings or in these Specifications as "Not in Contract" or "N.I.C." or anything which implies exclusion from the Contract in any manner.

1.02 - CONTRACT DRAWINGS: The Drawings hereinafter listed constitutes Plan No. 7397 and form a part of the Contract Documents.

Description

Sheets

Mechanical
Electrical

M-1 thru M-3
E-1 only

1.03 - MODIFICATIONS OF THE GENERAL PROVISIONS SECTIONS IN DIVISION 1:

(a) Reference is made to Section 11 - SHOP DRAWINGS AND MANUFACTURER'S, revised as follows:

1. In Subsection 11(b) delete the word "approving".

(b) Reference is made to Section 12 - REFERENCE TO TRADE NAMES, revised as follows:

1. In Subsection 12(b), 12(c) and 12(e)2 change "forty (40) days" to "thirty (30) days".
2. In Subsection 12(e) add Paragraphs No. 8 and 9 as follows:

"8. Contractor will coordinate installation and make, other changes which may be required for work to be completed in all respects.

9. Contractor waives claim for additional cost which may subsequently become apparent."

(c) Reference is made to Section 13 - FAMILIARITY WITH PLANS AND SPECIFICATIONS, add Paragraphs (c) and (d) as follows:

"(c) Coordinate work of the various Technical Sections of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items installed later.

(d) Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts and conduits, as closely as practicable; make runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs."

(d) Reference is made to Section 30 - CONSTRUCTION LIGHT AND POWER, delete the entire paragraph and substitute the following in lieu thereof:

"Temporary power will be made available to the Contractor from existing sources at the job-site as instructed by the City Engineer. The Contractor shall make and remove temporary connections, lines and power centers to bring light and power to all work areas as needed, all conforming to applicable requirements of the Los Angeles City Building Code requirements."

(e) Reference is made to Section 31 - CONSTRUCTION WATER, delete entire paragraph and substitute the following in lieu thereof:

"Water for construction purposes will be made available at the job-site as instructed by the City Engineer. Contractor shall make and remove temporary connections, lines and hoses

as necessary to bring necessary water to work areas, conforming to Los Angeles City Building Code Requirements. Wasting of water will be prohibited."

- (f) Reference is made to Section 32 - GAS FOR TESTS, delete the entire paragraph.
- (g) Reference is made to Section 33 - JOB TELEPHONE, delete the entire paragraph.
- (h) Reference is made to Section 34 - TEMPORARY STORAGE SHED, revised to read:

"CONTRACTOR'S STORAGE AREA - Locate outside of the "Maintenance Shop" on the job-site in close proximity of the work area, as directed by the City Engineer or the Shop and Warehouse Supervisor.

1. Access to such area shall be as directed by the City Engineer or the Shop and Warehouse Supervisor. Such access shall be kept clear and not interfere with the use of existing paved areas outside the "Maintenance Shop" by others.
 2. Contractor shall store all equipment, tools, concrete materials, Contractor's Field Office, sanitary facilities and other construction materials, and Contractor's vehicles in said area and shall temporarily close off the area with temporary fencing and gates. Upon completion of Contracted Work, remove all of the abovementioned items including debris, temporary fencing, and gates and leave the area clean and in a condition as existed prior to start of Contracted Work.
- (i) Reference is made to Section 35 - JOB OFFICE, delete the entire paragraph.
 - (j) Reference is made to Section 59 - PREVAILING WAGES, in Subsection 59(b) change "58(a)" to read "59(a)".
 - (k) Reference is made to Section 69 - LISTING OF SUBCONTRACTORS, revised as follows:
 1. In Subsection 69(c) replace paragraphs "1" and "3" with the following:

"1. The name, address and telephone number of each Subcontractor who will perform work or render service in an amount as indicated in the following tables:

CONTRACTOR'S TOTAL BID AMOUNT

LIST ALL SUBCONTRACTORS FOR
AMOUNTS IN EXCESS OF

Under	\$100,000.....	\$5,000
Between	\$100,000 and \$1,000,000.....	5% of the total bid
Above	\$1,000,000.....	\$50,000

"3. A description of that portion of the work to be performed by each Subcontractor. Only one Subcontractor for each portion of the work shall be listed. Failure of a Bidder to specify a Subcontractor for any portion of the work in excess of an amount as indicated in (1) above, shall constitute agreement by said Bidder that it is fully qualified to perform that work and shall perform it with its own forces. Its "own forces" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a Subcontractor assignee, or agent of the prime contractor. A prime contractor violating any provisions of this Subsection shall be penalized as set forth in Section (h)."

2. In Section 69(i), delete the words "Engineer and".

- (1) Reference is made to Section 71 - NOTIFICATION OF HAZARDOUS SUBSTANCES, add the following after the first paragraph.

"Copies of the Administrative Code and the Hazard Communications Program are available upon request from the City of Los Angeles Occupational Safety Office, 1401 West Sixth Street, Los Angeles, California 90017 at the cost of reproduction plus mailing changes."

1.04 - INSPECTION:

- (a) All work of this Project will be inspected by the Los Angeles City Department of Building and Safety, the Bureau of Engineering, Fire Department and the Inspector of the Bureau of Contract Administration. This does not relieve the Contractor of not performing the work in accordance with the Contract Drawings and the Specifications.
- (b) Contractor shall give the City Engineer 24-hour notice prior to installation of underground fuel tank and dispensing equipment and concrete work after completion of earthwork operations in order that the City Engineer can inspect subsurfaces to receive concrete slabs and other work. Contractor shall make all necessary corrections, etc., as instructed by the City Engineer at no added cost to the City.

NOTE: Prior to starting job-site operations, call the Bureau of Contract Administration, phone (213) 485-3002 to arrange for necessary inspections.

1.05 - STREET CLEANING: Contractor shall be responsible for removing from "City Streets" any excavated materials, demolished materials or equipment and debris falling from Contractor's trucks or other equipment during transporting from the job-site to an approved and licensed dump yard or disposal facility.

1.06 - CLEANING AND REMOVAL OF RUBBISH: Remove rubbish and debris resulting from work of this Contract from time to time, do not allow to accumulate at the job-site as directed by the City Engineer. Maintain the job-site in a clean and orderly condition at all times and not interfering with San Fernando Valley Shop and Warehouse operations and parking at the job-site until acceptance of Contracted Work by the City.

1.07 - JOB CONDITIONS:

(a) **Site Investigation:** Contractor shall investigate the job-site to ascertain all conditions affecting necessary procedure and sequence of work operations in the execution of the required work.

1. Report to the City Engineer any adverse conditions which would affect the proper execution of the Contracted Work and shall not proceed until instructed by the City Engineer.

2. Start of Contracted work shall imply Contractor's acceptance of job conditions.

(b) **Work Determination:** Contractor shall satisfy himself regarding the nature and types of work to be performed and be responsible for the determination of all classes of work to be accomplished.

(c) **Access to the Job-Site:** Via of existing gateway entrances to the San Fernando Valley Shop and Warehouse premises from Sherman Way or as otherwise directed by the City Engineer or the Shop and Warehouse Supervisor.

1. Contractor shall in no way block such entrances.

2. Contractor shall in no way go beyond the work area limits noted on the Contract Drawings.

3. Contractor shall keep all such entrances to the job-site free from obstructions, equipment, materials, vehicles, rubbish and debris and in a safe condition, free of any damages to any existing fencing and gates during extent of the Contracted work.

- (d) **Parking:** Contractor shall make arrangements with the City Engineer and/or the Shop and Warehouse Supervisor regarding parking of Contractor's and Contractor's personnel vehicles on the job-site.
1. Coordinate job-site parking so as not to interfere with Contracted Work operations and Shop and Warehouse vehicle parking on the premises.
 2. Keep all vehicles locked at all times while on the job-site.
- NOTE:** Should the City advise the Contractor's employees to park on nearby adjacent City streets, they shall observe City Parking Codes on such streets.
- (e) **Non-Interference With Others:** Contractor shall confine work operations to the job-site areas indicated on the Contract Drawings and shall not interfere with operations of the Shop and Warehouse parking on the premises.
- (f) **Site Regulations:** Contractor shall cooperate fully with the San Fernando Valley Shop and Warehouse authorities and shall comply with all regulations in force on the job-site.
- (g) **Dust Control:** During demolition, earthmoving and trenching operations, control the dust by watering or sprinkling at such intervals as will reduce dust during all hours of the Contracted Work operations.
- (h) **Job Safety:** Contractor shall observe all safety rules and regulations of the Los Angeles City Building Code and CAL/OSHA as applicable to the safety of Contractor, Contractor's employees and Valley Shop and Warehouse personnel during Contracted Work operations.
- (i) **Conducted Tour:** The City Engineer will lead a Conducted Tour of the existing facilities at job-site so that Bidders for the specified work may personally examine the existing conditions where the Contracted Work will be executed. The date and time of the Conducted Tour may be found in the Bid Documents entitled "Important Notice" attached hereto.
- (j) **Plan Box:** Required for the storage of a full set of Contract Drawings during the entire period of Contracted Work or until the City Engineer directs its removal. Box construction shall be temporary and weathertight construction with lock and proper identification and be located where directed by the City Engineer.
- (k) **Protections:** Contractor shall provide protections, barricades, signs, etc. as necessary to keep persons off the work

areas where trenching for utilities and excavations for underground storage tanks will occur on the job-site conforming to applicable provisions in DIVISION 1 - GENERAL PROVISIONS and shall remove them upon completion of such work or as otherwise directed by the City Engineer. Such protections shall not disrupt the operations at the job-site.

(1) Repair of Damages:

1. Required: Contractor shall repair or replace any damage to existing Shop and Warehouse structures and site improvements as caused by the Contractor's operations, at the Contractor's expense.
2. Methods: Repair or replace damaged areas or surfaces with new materials as necessary to restore damaged areas or surfaces to a condition equal to and matching the condition that existed prior to start of the Contracted Work to the full satisfaction of the City Engineer.

(m) Interruption of Services: Contractor shall make all provisions to accomplish Contracted Work without undue interference with the City's operations of the existing facilities at the job-site. Any necessary interruptions to existing mechanical and/or electrical facilities shall be done only after consultations with the City Engineer. Such shutdowns should preferably be done on Saturday or Sunday or on City Holidays and such period shall not exceed 6 hours at any one time.

1.08 - PERMITS: (As Applicable)

(a) Contractor shall obtain and pay for the following permits:

1. Shoring Permit.
2. Electrical Work Permit (City will submit and pay for plan check)
3. Fire Department Permits for installation of Underground Fuel Storage Tanks and Dispensing Equipment.
4. Grading Permit.
5. CAL/OSHA Permit.
6. Plumbing Permit.
7. Permit to Use Street Space and Deposit Building Materials.

(b) City of Los Angeles shall obtain and pay for the following:

1. South Coast Air Quality Management District (SCAQMD) Permit.

(END OF DIVISION)

SECTION 0201
DEMOLITION

1.00 - GENERAL

1.01 -DESCRIPTION: All demolition work noted or indicated on the Contract Drawings and in these Specifications involving minor demolition of portions of existing exterior concrete and/or asphalt concrete paving and concrete slab within buildings, as necessary including trenching and excavating for new underground fuel storage tanks, piping and electrical work, etc.

1.02 - RELATED WORK SPECIFIED ELSEWHERE:

- (a) General Requirements in Division 1A.
- (b) Earthwork in Section 0202.
- (c) Yard Work in Section 0203.
- (d) Concrete Work in Section 0301.
- (e) Miscellaneous Metals in Section 0503.
- (f) Underground Storage Tanks in Section 1504, includes the removal of existing underground storage tanks, piping and backfilling.
- (g) Electrical Work in Section 1601.

1.03 - CODES AND REGULATIONS: Perform all Contracted Work in strict accordance with all applicable Federal, State, County and Los Angeles City Codes and Regulations. Take particular care to meet all safety standards and requirements of CAL/OSHA, County and Local Governments. If in the opinion of the City Engineer or any other authority having jurisdiction, additional measures are needed, furnish all such materials and/or devices as directed and install them at no added cost to the City.

1.04 - WASTE AND/OR EXCESS MATERIALS: Promptly remove from the job-site all such materials resulting from work of this Section. Accumulation is not permitted.

1.05 - REPAIR OF DAMAGE: Refer to provisions of Subsection 1.07(m) of DIVISION 1A - GENERAL REQUIREMENTS.

1.06 - INSPECTION: Refer to provisions of Subsection 1.04 of DIVISION 1A - GENERAL REQUIREMENTS.

1.07 - PROTECTIONS: Erect and maintain necessary protections at the job-site against danger to life and property, refer to provisions of Subsection 1.07(1) of DIVISION 1A - GENERAL REQUIREMENTS.

2.00 - EXECUTION

2.01 - DEMOLITION: (As Applicable)

(a) **Required:** As necessary for replacement of underground storage tanks, not limited to the following:

1. Removal of portion of existing concrete and/or asphalt concrete paving outside the building and slab within the building for the installation of items hereinbefore noted in Subsection 1.01 - Description of this Section.
2. Removal of all other items which may be in way of new replacement work.

(b) **Methods:** (As Applicable)

1. As best devised by the Contractor for the required work with suitable equipment.
2. In accordance with Los Angeles City Building Code and Fire Code and Federal, State, County and Local Safety Code and other applicable laws and ordinances as noted in Subsection 1.03 of this Section.
3. Procedure to be orderly and careful with due consideration for occupants and in the parking areas on the premises.
4. General cutting of exterior concrete and/or asphalt concrete yard paving and concrete slab within the building shall be straight-line saw-cut as necessary to limits indicated on the Drawings. Cut to 1-inch depth as necessary for providing straight-line join-lines where new concrete joins existing concrete yard paving and for concrete slab within building, where patching is required.
5. Where existing portions of concrete yard paving and concrete slab inside building is removed, leave in place enough exposed existing reinforcing as necessary for tie-ins of new reinforcing for new concrete repair work.
6. Dust Control: Comply with provisions of Subdivision 1.07(g) of DIVISION 1A - GENERAL REQUIREMENTS during demolition operations of this Section.

2.02 - SALVABLE MATERIALS: Existing "Select Base Materials" located beneath removed exterior concrete and/or asphalt concrete paving and beneath concrete slab in building and elsewhere may be salvaged for reuse under paving and concrete slab repairs subject to the approval of the City Engineer. Stockpile the salvaged "Select Base Materials" where directed by the City Engineer or the Maintenance Shop Supervisor until time for reuse.

(END OF SECTION)

SECTION 0202
EARTHWORK

1.00 - GENERAL

1.01 - DESCRIPTION: All excavating, filling and trenching indicated on the Contract Drawings and in these Specifications including, but not limited to the following at the job-site:

- (a) Filling and backfilling to bring all areas to required subgrades for concrete and/or asphalt concrete paving repairs and concrete slab repairs within the building.
- (b) Select base for exterior concrete or asphalt concrete paving and concrete slab repairs inside building.
- (c) Select base for new under concrete slab over underground storage tanks.

1.02 - RELATED WORK SPECIFIED ELSEWHERE:

- (a) Demolition in Section 0201.
- (b) Concrete Work in Section 0301.
- (c) Concrete and/or Asphalt Concrete Repairs in Section 0203 - YARD WORK.
- (d) Excavating and backfilling for pipe, conduit, leak detection cables and underground storage tanks, etc. in Section 1504 - UNDERGROUND STORAGE TANKS.
- (e) Removal of existing underground storage tanks and piping in Section 1504 - UNDERGROUND STORAGE TANKS.
- (f) Trenching, excavating and backfilling for utility, electrical and related minor structures in Section 1601 - ELECTRICAL.
- (g) Soil and/or underground water contamination handled and specified in Section 1504 - UNDERGROUND STORAGE TANKS.

1.03 - DISPOSAL OF EXCESS MATERIAL: Remove all excess excavated and imported material not used for fill or backfill and all waste and debris from the job-site.

1.04 - PROTECTION:

- (a) Protect and guard all excavations against danger to life, limb and property as prescribed by the Los Angeles City Department of Building and Safety and as noted in Subdivision 1.07(1) of DIVISION 1A - GENERAL REQUIREMENTS.
- (b) Protect adjacent existing improvements against damage by Contractor's operations. Repair or replace damaged items to the full satisfaction of the City Engineer at no added cost to the City.
- (c) Shore, crib or lag excavations and earthbanks as necessary to prevent caving in, erosion or gullyng of sides.
- (d) Divert or pump water out of all excavations and trenches until piping, conduit, leak detection cables and tanks are installed and until concrete is placed, forms are removed and backfilling is completed.

1.05 - SHORING:

- (a) **Required:** To properly and safely support earth sides of excavations.
- (b) **Design and Calculations:** Contractor shall design and prepare shoring plans and make calculations in accordance with the requirements of the Los Angeles City Building Code Sections 91.2902 and 91.2903 and Safety Orders of the State of California, Division of Industrial Safety, Title 8, Subchapter 4, Article 6, Sections 1540 and 1541 as necessary for a permit.
- (c) Contractor shall submit shoring plans and calculations to the Los Angeles City Department of Building and Safety and obtain and pay for the required permit.
- (d) Shoring shall be placed and coordinated with the earth work operations for the new tank as directed by the City Engineer.
- (e) Remove such shoring when no longer needed or as otherwise directed by the City Engineer or authorities having jurisdiction. Upon completion of the Project, remove all such shoring from the job-site.

1.06 - INSPECTIONS:

- (a) Excavation of existing fills, reworking of natural soils and compaction of all required fills will be inspected and tested by a Soils Engineer who will be responsible to the City Engineer and will be paid for by the City.

- (b) Place all such backfill under the full supervision of the Soils Engineer.
- (c) The Soils Engineer will inspect all subgrades and tank excavations prior to placing of fill materials.

2.00 - PRODUCTS

2.01 - FILL MATERIALS: Furnish imported clean sand as necessary, subject to the approval of the City Engineer or the Inspector prior to use.

- (a) Obtain imported clean sand from a source approved by the City Engineer.
- (b) Imported clean sand shall be free of foreign materials, vegetable growths, sod, expansive soils and all debris.

2.02 - SELECT BASE MATERIALS: For Under Concrete and/or Asphalt Concrete Paving: "Untreated Crushed Miscellaneous Base" as specified in Section 200 - 2.4 of the "Standard Specifications" using 1-1/2 inch maximum size crushed miscellaneous materials; or reuse salvaged "Select Base Materials" specified in Subsection 2.02 of Section 0201 subject to the approval of the City Engineer.

2.03 - BACKFILL MATERIALS: See Subsection 1.05(c)3 in Section 1504 - UNDERGROUND STORAGE TANKS.

3.00 - EXECUTION

3.01 - SITE PREPARATIONS:

- (a) Scarify the subgrade for concrete and/or asphalt concrete paving repairs to a depth of 6-inches and bring to optimum moisture content and then compact to at least 90 percent of maximum density in accordance with ASTM Designation D1557 - Method of Compaction. Depending on the moisture content, it may be necessary to allow the scarified subgrade to dry slightly before compaction. Subgrade preparation shall be in accordance with Section 301-1 of the "Standard Specifications". Flooding will not be permitted.
- (b) Fill required for filling of holes and trenches existing on the job-site or resulting from Contractor's operations, as specified in Section 1.05(c) in Section 1504 - UNDERGROUND STORAGE TANKS.
- (c) **Work Coordination:** Fully coordinate the work of this Section with that of other trades involved and with the City to assure proper sequence of work, limitations, methods and time of work so as to minimize interference with operations at the job-site.

- (d) **Control of Surface and Ground Water:** Do not allow water to accumulate or stand in or near the work areas at any time; maintain continuous drainage of the work-site. Contractor, at his own expense, shall supply and maintain pumping equipment to keep water out of trenches and tank excavations until completion of fuel tank installation and backfilling operations.
- (e) Soils Engineer to approve subgrade prior to placing any fill or receive subsequent specified work.

3.02 - EXCAVATING:

- (a) **For Substructure Concrete Slabs Beneath Storage Tanks: (As Applicable)**
 - 1. When Earth Banks Are Stable: To net sizes of concrete, except as otherwise specified or indicated on the Contract Drawings.
 - 2. When Earth Banks Are Not Stable: Sufficiently excavate wider than concrete to allow for forms and inspection thereof.
 - 3. Where Rock Occurs: Surface to be leveled to a clean, even, hard surface.
 - 4. Depth: As indicated on the Contract Drawings.
 - 5. Excessive Depth: To be filled with concrete specified in Section 0301 - CAST-IN-PLACE CONCRETE where excavation is made deeper than required by Drawings at Contractor's expense.
 - 6. Inspection Required: After excavation and before placing concrete base slab below tanks and before backfilling, the exposed soil will be carefully inspected by the Soils Engineer to verify removal of additional unsuitable soil.
 - 7. Protection: Protect all excavations and trenching against caving in with shoring or lagging in conformance with "Construction Safety Orders" Division of Industrial Safety, State of California, Title 8, Subchapter 4, Article 6, Sections 1540 and 1541.
 - 8. When excavating adjacent to existing structures, do so in a sequence as required and approved by the City Engineer to avoid displacement or damage to the existing adjacent structures.

- (b) **For Underground Storage Tanks:** Excavate to depth necessary for proper installation of concrete slab beneath the new underground storage tanks in accordance with requirements of the Los Angeles City Municipal Code and as indicated on the Contract Drawings and specified in Subsection 1.05 of Section 1504.

NOTE: Where new underground storage tanks are to be located in the same location where the existing underground storage tanks have been removed and, resulting holes filled in by the City, excavate as necessary to provide proper size and depth holes for the new tanks.

- (c) Trenches for pipe, leak detection cables, conduit to fuel storage tanks as specified in Subsection 1.05 of Section 1504.

3.03 - SELECT BASE:

- (a) Place in accordance with Section 301-2 of the "Standard Specifications".
- (b) Place select base beneath concrete yard paving and/or asphalt concrete paving repairs and elsewhere to thickness noted on the Drawings.
- (c) Prior to placement of the Select Base, the upper 6-inches of subgrade soil, whether fill or natural soil, shall be compacted to 90 percent relative compaction in accordance with Section 301-1.3 of the "Standard Specifications".
- (d) Place select base materials to thickness matching that of original thickness of select base under removed concrete and/or asphalt concrete yard paving and make ready for receiving of paving repair materials (concrete or asphalt concrete) and under new concrete slabs over new underground storage tanks.

3.04 - BACKFILLING: Refer to Subsection 1.05(c) in Section 1504 - UNDERGROUND STORAGE TANKS.

(END OF SECTION)

SECTION 0203
YARD WORK

1.00 - GENERAL

1.01- DESCRIPTION: All yard work involving concrete and/or asphalt concrete yard paving repairs resulting from trenching and excavating for underground storage tanks, underground piping and electrical work at the job-site as indicated on the Contract Drawings and in these Specifications, including (as applicable) the following:

- (a) On-site "Asphalt Concrete Paving Repairs".
- (b) Concrete Yard Paving Repairs.
- (c) Slurry coating.

1.02 - RELATED WORK SPECIFIED ELSEWHERE:

- (a) Demolition in Section 0201.
- (b) Earthwork including excavating, grading, filling and select base materials in Section 0202.
- (c) Concrete Work and Concrete Paving Repairs in Section 0301.
- (d) Excavating, trenching and backfilling for UNDERGROUND STORAGE TANKS in Section 1504.
- (e) Removal of existing underground storage tanks, etc. in Section 1504 - UNDERGROUND STORAGE TANKS.
- (f) Excavating, trenching and backfilling for Electrical Work in Section 1601.

1.03 - REPAIRS: As required for complete replacement of removed asphalt concrete paving to match existing adjacent asphalt concrete paving in quality and appearance and to conform to applicable provisions of these Specifications.

1.04 - PROTECTIONS: Furnish, erect and maintain fences, barriers, lights and signs as necessary, in order to adequately protect the public and City employees and existing work and work under this Contract. See Subdivision 1.07(1) of DIVISION 1A - GENERAL REQUIREMENTS.

2.00 - PRODUCTS: (As Applicable)

2.01 - CONCRETE MATERIALS: Materials, form work and reinforcing shall be furnished in accordance with applicable requirements specified in Section 0301 - CAST-IN-PLACE CONCRETE.

2.02 - ASPHALT CONCRETE MATERIALS (As Applicable): In accordance with Section 203-5 and mix proportioning in accordance with Section 203-6.5 of the "Standard Specifications".

NOTE: Verify with the Asphalt Institute as to which viscosity grade of asphalt to be used in the asphalt concrete paving repairs on the job-site.

(a) Asphalt shall match the existing viscosity of asphalt concrete in place, as applicable to the thickness of the existing paving as follows:

1. For 8-Inch A.C. Paving: Single course application, Type 1C (medium) AR8000 with 1/2-inch maximum size aggregates.
2. For "Heavy Traffic A.C. Paving: Two coarse A.C. application, Type 1B (medium course AR 8000 with 1-inch thick maximum size aggregates for first course and for second course Type 1C (medium) AR 8000 with 3/4-inch maximum size aggregates.

2.03 - MISCELLANEOUS MATERIALS: (As Applicable)

- (a) **Aggregate Base (Select Base):** As specified in Section 0202 - EARTHWORK.
- (b) **Soil Sterilant:** U.S. Borax Corporation, "Polyborchlor".
- (c) **Slurry Coating Materials:** In accordance with Construction Leaflet No. 22 (CL-22) dated January 1978 by the Asphalt Institute. Materials shall be a mixture of quick setting (QS) emulsified asphalt, mineral aggregates and water. Slurry mix shall have a Type I fine basic aggregate graduation using No. 8 maximum nominal size aggregate, for maximum crack penetration and surface sealing in low traffic density areas.

3.00 - EXECUTION

3.01 - ON-SITE ASPHALT CONCRETE PAVING REPAIRS:

- (a) **Required:** To replace removed asphalt concrete paving on the job-site where occur at perimeter of new underground storage tanks concrete slab covering, trenching for underground

pipings including holes, cracks and other defects resulting from Contractor's operations.

(b) **Materials:** As hereinbefore specified (as applicable).

(c) **Subgrade Preparation:**

1. Compact existing subgrade top 6" to 90% relative compaction in accordance with Section 301-1.3 of the "Standard Specifications".
2. Properly roll subgrade to a smoothness tolerance of plus or minus 0.04 ft.
3. Place select base materials to thickness matching existing adjacent select base materials in accordance with Section 301-1.2 of the "Standard Specifications".

(d) **Asphalt Concrete Paving Repairs:**

1. General: In accordance with Section 302-5 of the "Standard Specifications".
2. Tack coat cut surfaces of existing saw-cut asphalt concrete and/or concrete against which new asphalt materials will be placed at least 24-hours prior to laying new asphalt materials. Terminate tack coating on concrete surfaces at level with top of new asphalt concrete paving.
3. Lay new asphalt concrete paving materials to thickness matching that of adjacent asphalt concrete surfaces. Make smooth, even and flush with adjacent surfaces without low-spots, hollows or irregularities. Use hot smoothing irons to obtain straight and flush joint lines.

3.02 - CONCRETE YARD PAVING REPAIRS: (As Applicable)

(a) See Section 0301 - CAST-IN-PLACE CONCRETE.

3.03 - SLURRY COATING: (As Applicable)

- (a) **Required:** Over asphalt concrete paving repairs as necessitated by the Contracted Work operations.
- (b) **Material:** As hereinbefore specified in Subsection 2.03(c) of this Section.
- (c) **Substrate Preparation:** Clean asphalt concrete paving repair surfaces and adjacent existing pavement surfaces of oil,

grease and foreign materials by approved methods and leave surfaces to receive slurry coating dry.

- (d) **Weather Limitations:** Execute slurry coating work on repaired asphalt concrete paving surfaces when such surfaces and atmospheric temperatures are above 50 degrees F and when no precipitation is expected within 24-hours.
- (e) **Protection:** Provide necessary protections and do coating application by methods to avoid getting slurry coating work on exposed concrete and/or masonry surfaces and other improvements.
- (f) **Mixing, Delivery, Equipment Used and Placing of Slurry Coating:** In accordance with specifications prescribed by Construction Leaflet No. 22 (CL-22) dated January 1978 by the Asphalt Institute. Place slurry materials by approved methods and to a uniform thickness over the entire area of the paving repairs and an adjacent existing asphalt concrete areas as directed by the City Engineer. New slurry coating shall match existing adjacent slurry coating where occur in color, as approved by the City Engineer.

(END OF SECTION)

SECTION 0301
CAST-IN-PLACE CONCRETE

1.00 - GENERAL

1.01 - DESCRIPTION: All cast-in-place concrete, forms and reinforcing, work indicated on the Drawings and in these Specifications for new underground storage tanks at the job-site including:

- (a) Concrete slab above the new underground storage tanks.
- (b) Underground tanks concrete ballast pads.
- (c) Concrete paving repairs as necessary.
- (d) Concrete remote waste oil fill inside building.
- (e) Forms for all concrete as necessary.
- (f) **Type of Concrete:** As per Los Angeles City Building Code, Section 91.2604, Standard 3000 psi standard weight for slabs and other work in contact with earth.

1.02 - RELATED WORK SPECIFIED ELSEWHERE:

- (a) General Requirements in Division 1A.
- (b) Demolition Work in Section 0201.
- (c) Earthwork in Section 0202.
- (d) Yard Work in Section 0203.
- (e) Miscellaneous Metals in Section 0503.
- (f) Removal of existing tank and equipment in Section 1504 - UNDERGROUND STORAGE TANKS.
- (g) Furnishing and placing all sleeves, inserts, etc., for Mechanical and Electrical Work in Divisions 15 and 16.

1.03 - QUALITY ASSURANCE:

- (a) **Tests for Cement and Aggregates:** As required by the City Engineer at the expense of the City.
- (b) **Tests for Reinforcement:** Prior to use, acceptable written evidence that reinforcement has passed their respective ASTM tests shall be submitted to the City Engineer for approval.

- (c) **Concrete Mix Design Certification:** To be submitted by the Testing Agency for each mix design and each test to the City Engineer for approval.

1.04 - INSPECTION:

- (a) **For On-Site Concrete Work:** For any forms, by the City Engineer and the Los Angeles City Department of Building and Safety; after placement of reinforcing and prior to placement of concrete.

1.05 - RECORD DRAWINGS: Clearly mark changes, deletions or additions to the work of this Section as required by Section 42 of DIVISION 1 - GENERAL PROVISIONS of these Specifications.

2.00 - PRODUCTS

2.01 - CONCRETE MATERIALS:

- (a) **General:** In accordance with requirements of the City of Los Angeles Building Code, Division 26 for on-site concrete.
- (b) **Cement:**
1. Type: Portland cement, ASTM C150, Type I or Type II.
 2. Alkali Content: Total amount of sodium or potassium oxide shall not exceed 0.6 percent when the aggregate contain opalescent silica or are reactive to alkalis.
- (c) **Aggregates:**
1. Standard Weight Aggregates: Fine and coarse, ASTM C33 and Los Angeles City Building Code, Section 91.2603(d) coming from San Gabriel Valley sources.
 2. Maximum Size: Not larger than 1-inch.
 3. Tests: As required by the City Engineer at the expense of the City.
- (d) **Non-Shrink Grout:** "Por-Rok" as manufactured by Hallemitt Manufacturing Co., Cleveland, Ohio.

2.02 - FORM MATERIALS: (As Applicable)

- (a) **Lumber:** "Standard" grade or better Douglas fir boards and framing or other suitable species, as approved; S1S1E or S4S unless otherwise specified.
- (b) **Plywood:** Softwood plywood Plyform B-B ext. as classified by the American Plywood Association, Class I Exterior, PS 1-66 or HDO, High Density Overlay Plyform, Class I Exterior.

2.03 - REINFORCEMENT: (As Applicable)

- (a) **Bars:** Billet steel, ASTM A615-40 grades and sizes as called for on the Drawings.
- (b) **Wire:** Cold drawn steel, ASTM A82.
- (c) **Tie Wire:** Annealed; not less than 16 gage.
- (d) **Wire Mesh:** Electric welded steel wire fabric, ASTM A185, sizes as noted on the Contract Drawings.
- (e) **Reinforcement Supports and Accessories:** Shall conform to concrete Reinforcing Steel Institute recommendations. Use concrete cube-type supports for slabs on grade or stirrups with sand pads.

2.04 - MISCELLANEOUS MATERIALS: (As Applicable)

- (a) **Water:** From a supply distributed for domestic purposes.
- (b) **Admixtures:** Permitted only upon written approval of the City Engineer; must conform to Section 91.2603(g) of the Los Angeles City Building Code and the Department of Building and Safety Rule of General Application RA 27-69.
- (c) **Curing Compound:** Sealtight No. 1100 clear with dye by W. R. Meadows, Inc., Newport Beach, California 92662.
- (d) **Abrasive Aggregates:** (For Non-Slip Finish on Concrete Slab Over New Underground Fuel Tanks) Carborundum or aloxide grains uniformly graded, passing a No. 14 and No. 20 sieve.
- (e) **Curing Sealer and Hardener Compound:** "Terratite A/C" manufactured by Nelson Technical Coatings Co., 2147 N. Tyler Avenue, El Monte, California, phone (213) 575-3333.
- (f) **Curing Paper:** Sisalkraft No. SK-30 (ASTM C171) as manufactured by the Sisalkraft Division of St. Regis Paper Co. or 6 or mil polyethylene.

3.00 - EXECUTION

3.01 - FORM WORK:

- (a) **General:** As per Los Angeles City Building Code, Section 91.2606.
 - 1. True to line and grade.
 - 2. Mortar-tight.

3. Sufficiently braced, staked and tied, and adequately nailed to prevent displacement or deflection.
4. All forms constructed in manner suitable for easy removal without damaging concrete surfaces.
5. Form oil drain concrete pit walls with top recessed to receive the maintenance hole frame and cover as detailed on the Contract Drawing.

(b) **Form Removal:** Forms to remain undisturbed for at least 24 hours after concrete has been placed.

3.02 - REINFORCEMENT - PLACING AND PROTECTION: (As Applicable)

- (a) **Placing:** Los Angeles City Building Code, Section 91.2607 and 91.2612 and A.C.I. "Manual of Standard Practice for Detailing Reinforced Concrete". (ACI 318 Section 7.0 and as noted on the Contract Drawings).
- (b) **Protection:** Reinforcement shall be set according to the Los Angeles City Building Code, Section 91.2607(h) and cover by a thickness of concrete as indicated on the Contract Drawings.
- (c) **Wire Fabric:** Provide a minimum side and end lap of one full mesh and lace with 16-gage tie wire.

3.03 - CONCRETE MIX DESIGN:

(a) **Standard 3000 Concrete:**

1. Minimum Ultimate Compressive Strength at 28 Days: Not less than 3000 pounds per square inch.
2. Water Content: To be minimum for necessary placing of concrete and for specified slump and finishes. Not to exceed 8 gallons per sack of cement, including moisture in the aggregate or on the surface.
3. Volume of fine aggregates not less than 40 percent nor more than 50 percent of the sum of the separate volumes of fine and coarse aggregates as measured loose before being combined.
4. Volume of combined fine and coarse aggregate not more than 6 cu. ft. per sack of cement, but so proportioned with respect to water cement content that the concrete can be placed without segregation and the slump is within the specified limits.

5. Permissible allowance for bulking of sand not more than 20 percent.

- (b) **Slump:** Shall not exceed 3-inches for slab on grade. For concrete ballast pad over 8-inches thick under underground fuel storage tank, slump shall be maximum 5-inches.

3.04 - READY-MIXED CONCRETE:

- (a) **General:** Ready-mixed concrete, completely transit-mixed in truck mixers, permitted in lieu of concrete mixed at the job-site, in accordance with the Los Angeles City Building Code, Section 91.2605.
- (b) **Materials and Quality:** To conform to preceding specifications for respective grade of concrete.
- (c) **Mixing and Delivery:** ASTM C94, for truck delivery and mixing.
- (d) **Ready-Mixed Concrete** shall be manufactured by a manufacturer licensed by the Board of Building and Safety Commissioners of the City of Los Angeles and in accordance with City of Los Angeles Building Code 91.2605(b).

3.05 - MIXING AND PLACING:

- (a) **Preparation:** Los Angeles City Building Code, Section 91.2605(a).
- (b) **Mixing:** Los Angeles City Building Code, Section 91.2605(b).
- (c) **Conveying and Placing:** Los Angeles City Building Code, Section 91.2605(c) and 91.2605(d) as rapidly as practicable by methods to prevent segregation or loss of ingredients and to avoid rehandling.
1. Keep poured concrete surfaces level or sloped as indicated on the Contract Drawings.
 2. Concrete slab over underground storage tanks shall be placed on well-placed "Select Base" material.
- (d) **Vibration and Tamping:** As necessary to thoroughly compact the concrete above and below grade, completely fill forms and encase reinforcement and inserts; by mechanical and/or hand equipment as suitable and as approved.
- (e) **Compaction of Slab Concrete:**
1. Tamp to compact the concrete throughout slab depth, with iron tampers unless otherwise approved.

2. Screed to bring the concrete surfaces to required grades and slopes with straight edge screeds and scrappers as necessary.
3. Float to compact surfaces evenly; with power float unless otherwise authorized. Remove any excess surface water before floating; use no mortar for leveling purposes.

3.06 - CONCRETE FINISHES: (As Applicable)

(a) Concrete Slabs Over Underground Storage Tanks:

1. Provide monolithic hand or rotary trowel non-slip finish to produce a surface with markings.

or

2. Provide an abrasive type non-slip finish on the sloping surfaces with a sprinkling of abrasive aggregates (hereinbefore specified) evenly on surfaces at a rate 1/4-lb. per square foot, tamped into the surface after initial troweling, do not bury the aggregates below the surface, then steel trowel.
3. Depress slabs where maintenance hole identification tags will be placed.

(b) Concrete Ballast Pad Below Underground Storage Tanks: Smooth steel trowel finish.

(c) Concrete Yard Paving Repairs (As Applicable): Finish to match finish of existing adjacent adjoining concrete paving.

3.07 - CURING:

- #### **(a) General:** In accordance with Los Angeles City Building Code (U.B.C. Supplement Section 2605(e). Keep concrete moist for at least 14 days, (7 days for concrete ballast slab under fuel storage tank).

(b) Methods:

1. Exterior Concrete Yard Paving and Over Underground Storage Tanks and Waste Oil Concrete Pit: Coat with specified clear membrane curing compound in accordance with manufacturer's directions as soon as possible after finishing of concrete without marring the concrete. Formed curbing at fuel dispenser base to be kept continuously wet by frequent spraying with clean water.

2. Concrete Ballast Slab Under Storage Tanks: Cover with curing paper or keep continuously wet with clean water during curing period or as otherwise directed by the City Engineer.

3.08 - DEFECTIVE MATERIALS AND CONCRETE:

- (a) Promptly remove defective materials and concrete from the job-site.
- (b) Any concrete improperly formed or which has sand streaks, or with voids or rock pockets or which is otherwise defective shall be removed and replaced with new concrete suitable to the City Engineer, unless suitable correction of defects is authorized by the City Engineer.
- (c) **Responsibility:** Removal, replacement, corrections and strengthening to be done by and at the expense of the Contractor.

3.09 - PROTECTION:

- (a) Finished concrete surfaces to be protected from stains, abrasions and any other damage as necessary.
- (b) Protect existing adjacent finished concrete surfaces by use of polyethylene sheet material during pour of concrete above or adjacent to such surfaces.

(END OF SECTION)

SECTION 0503
MISCELLANEOUS METALS

1.00 - GENERAL

1.01 - DESCRIPTION: All miscellaneous metal work at the job-site indicated on the Contract Drawings or in these Specifications, including but not limited to the following:

- (a) Support of underground storage tanks.
- (b) Galvanized steel anchor rods and bolts securing tanks to concrete ballast pads. Apply epoxy resin coating for corrosion protection in field.
- (c) Engraved brass plates for identification tags.
- (d) Rods, bolts, dowels, nuts, washers, anchors, brackets, chain, plates, angles, connections and other miscellaneous iron as may be indicated on the Contract Drawings.
- (e) Maintenance hole covers and frames and access doors.
- (f) Metal waste oil tray.

1.02 - RELATED WORK SPECIFIED ELSEWHERE:

- (a) Setting of anchor bolts, sleeves and other inserts in Section 0301 - CAST-IN-PLACE CONCRETE.
- (b) PAINTING in Section 0907.
- (c) UNDERGROUND STORAGE TANKS in Section 1504.
- (d) ELECTRICAL WORK in Section 1601.

1.03 - SUBMITTALS:

- (a) **Shop Drawings:** Required where specified and when Contractor proposes a substitution, alternate product, material or detail as proposed to that specified or detailed on the Contract Drawings, in accordance with requirements of Sections 11 and 12 of Division 1 - GENERAL PROVISIONS. Identify each proposed item with the corresponding Contract Drawing detail number and Specification references.
- (b) **Samples:** Submit physical samples of specified materials for color or texture selection by the City Engineer, when so requested.

1.04 - MISCELLANEOUS GENERAL ITEMS:

- (a) **Workmanship:** As per best standard trade practice. Installations to be square, plumb, true to line, properly aligned and accurately fitted with proper joints and adequate fastenings.
- (b) **Built-In Items:** Deliver all items to be cast into concrete work in time so as not to delay construction operations.

2.00 - PRODUCTS

2.01 - MISCELLANEOUS METALS: (As Applicable)

- (a) **General:** All materials shall conform to the following standards and where not specifically mentioned, shall be new, best commercial grade, free from defects and imperfections. Where two or more identical items are required, they shall be of the same manufacturer.
- (b) **Iron and Steel (General):** Los Angeles City Building Code, Division 27.
- (c) **Structural Steel:** ASTM A36.
- (d) **Steel Tubing:** AISI MT.1010, Electrical welded, minimum 14 gage, shape and size as indicated on the Contract Drawings.
- (e) **Steel Pipe:** ASTM A120, pipe used on exterior of building to be galvanized.
- (f) **Steel Plates, Shapes and Bars:** Mild or structural grade as per applicable ASTM Specifications.
- (g) **Brass Plate.**
- (h) **Cast Iron.**

2.02 - MISCELLANEOUS RELATED MATERIALS: (As Applicable)

- (a) **Arc-Welding Electrodes:** ASTM A233.
- (b) **Paint Primer (For Uncoated Ferrous Metal):** Rust-Oleum Corporation "X-60 Bare Metal Red Primer".
- (c) **Non-Shrink Grout:** "Por-Rok" as manufactured by Hallemitt Manufacturing Co., Cleveland, Ohio.
- (d) **Fasteners:** Same material and finish of work to be fastened together. Screws to be countersunk oval head type unless otherwise indicated on the Drawings.

- (e) **Mechanical Anchors:** For securing miscellaneous metal items to concrete to be self-drilling concrete anchors, not less than 3/8-inch size, Phillips Redhead, or as otherwise indicated on the Drawings.
- (f) **Galvanizing (Hot-Dip):** ASTM A123, or as applicable after fabrication.
- (g) **Galvanizing Repair Material:** "Dri-Galv" or "Galvicon" or other approved 90% zinc rich cold process repair material.
- (h) **Bolts and Nuts:** Low-carbon type, Grade "B" ASTM A307.
- (i) **Miscellaneous:** All items of miscellaneous metal indicated on Drawings, including clip angles, ties, straps, anchors, bolts, angles, rods and other appurtenances required by details or necessary for proper installations.
- (j) **Dry Pack:** A cement sand mix of 1 part Portland cement to 2-1/2 parts sand by volume with necessary water added to provide for solid compaction.
- (k) **Coal Tar Mastic:** "Koppers" Bitumastic No. 505.
- (l) **Sealant Material:** Filler, asphalt impregnated; ASTM D1715.

3.00 - EXECUTION

3.01 - GENERAL CONNECTIONS, FABRICATION AND ERECTION: (As Applicable)

- (a) **General:** Los Angeles City Building Code, Division 27 and as indicated on the Drawings.
- (b) **Welding:** Electric arc-welding, Los Angeles City Building Code, Division 27, Section 91.2714.
- (c) **Bolting:** Bolts to be drawn tight and threads set to secure nuts. Los Angeles City Building Code, Section 91.2713.
- (d) **Assembly:** Assemble all items with parts in true alignment and accurately fitted, joints well made, adequately fastened with butts and sharp edges ground smooth.
- (e) **Conceal all fastenings** where practicable and make exposed joints hairline.
- (f) **Non-ferrous metal items** shall comply with best practice of the trade. Form all sections true to detail and free from defects impairing appearance, strength and durability.

(g) Field Galvanizing:

1. Required: For protective coating of damaged galvanized surfaces resulting from welding or other construction operations in the shop or at the Fire Station No. 42 job-site.
2. Method: By "Dri-Galv" or "Galvicon" or equal methods in accordance with manufacturer's directions.

(h) Shop Painting:

1. Required: On all uncoated ferrous metal; galvanized ferrous metal not to be shop coated.
2. Paint: Rust-Oleum Corporation "X-60 Bare Metal Red Primer".
3. Painting: Full prime coating, completely covering the metal surfaces. Apply at least 1 coat on all surfaces which will be accessible after fabrication and erection or at least 2 coats on all surfaces which will be inaccessible after fabrication and erection.

3.02 - MAINTENANCE HOLE COVERS AND FRAMES:

- (a) Required:** At various openings in concrete slab over the new Underground Storage Tanks indicated on the Drawing except those specified in Section 1504 - UNDERGROUND STORAGE TANKS.

(b) Types and Materials:

1. Traffic-Type waterproof design cast-iron checker plate cover of 10-inch diameter with tubular steel frame providing 10-inch clear opening.
2. Traffic-Type waterproof design cast-iron maintenance hole cover of 36-inch diameter with tubular steel frame and with 12-inch x 12-inch access door as noted on Drawing Sheet M-2.
3. Waterproof design cast-iron maintenance hole cover of 24-inch x 24-inch (square shape) without frame and with opening for fitting to receive 4-inch P-trap as indicated on the Contract Drawing.

- a. Shop Drawing: Required. See Subsection 1.03(a) of this Section.

- (c) Finish:** As noted on the Contract Drawings and specified in Section 0907 - PAINTING.

- (d) **Installation:** Cast-in-place tubular steel frames in concrete so that when covers are installed within the frames, the cover will be level and flush with surface of concrete slab as indicated on the Drawings.
- (e) **Installation of maintenance hole cover over the new concrete 24-inch x 24-inch x 24-inch oil sump pit as noted on the Contract Drawings in level position flush with existing adjacent concrete slab floor.**

3.03 - ENGRAVED BRASS IDENTIFICATION PLATES:

- (a) **Required:** To identify various maintenance hole openings in the concrete slab over the underground storage tanks.
- (b) **Materials:**
 - 1. **Plates:** 1/8-inch thick brass plates (70% copper, 30% zinc) with U.S. No. 3 N.L. finish with 1-1/2-inch high engraved letters. Size of tags and engraved wording indicated on the Drawings.
 - 2. **Fasteners:** No. 8 x 3/4-inch flathead brass screws with lead cinch anchors.
- (c) **Installation:** Located as indicated on Drawings adjacent to the respective maintenance hole opening, recessed in and flush with concrete slab surface and secured with the flathead brass screws in cast-in-place lead cinch anchors.

3.04 - WASTE OIL TRAY:

- (a) **Required:** Over the Maintenance hole cover of the waste oil concrete pit where indicated on the Contract Drawings.
- (b) **Materials:**
 - 1. Galvanized sheet steel of suitable gauge.
 - 2. **Sealant:** As hereinbefore specified in Subsection (2.02(1)).
 - 3. **Pipe:** Steel pipe of diameter indicated on the Drawing as hereinbefore specified in Subsection 2.01(e).
- (c) **Shop Drawings:** Required.
- (d) **Fabrication:** All welded shaped with flat base sheet with drain pipe and with vertical side, back and front sides and with drain pipe centered on flat base.
- (e) **Installation:** As indicated on the Contract Drawing in level position parallel to existing adjacent partition wall and

over and aligned with the maintenance hole cover over the new waste oil concrete pit. Drain pipe to fit within top opening of cover and the 4-inch P-trap. Apply sealant at exposed edges of tray where indicated on the Drawings.

(END OF SECTION)

SECTION 0907
PAINTING

1.00 - GENERAL

1.01 - DESCRIPTION: All painting at the job-site as indicated on the , Contract Drawings and in these Specifications, including, but not limited to the following: (As Applicable)

- (a) Exterior and interior ferrous metal surfaces.
- (b) All exterior and interior mechanical and electrical equipment including all piping and conduit without complete factory finish.

1.02 - WORK NOT TO BE PAINTED:

- (a) Surfaces completely factory finished.
- (b) Aluminum, bronze and stainless steel metal work.

1.03 - PAINTING INCLUDED IN OTHER DIVISIONS:

- (a) Shop Coating in Section 0503 - MISCELLANEOUS METALS.
 - 1. Ungalvanized miscellaneous metals.

1.04 - SUBMITTALS: Comply with provisions of Sections 11 and 12 in DIVISION 1 - GENERAL PROVISIONS.

- (a) **Color Samples:** Required for each type of paint material and color; four 8-1/2-inch x 11-inch swatches, to be submitted to the City Engineer for approval not less than 7 days prior to start of painting.
- (b) **Painting Samples at Job-Site:** May be required, on surfaces and by methods comparable with the painting work requirements, representing true quality of the proposed work; to be prepared by the Contractor during progress of the work, as requested by the City Engineer.

1.05 - PRODUCT HANDLING (DELIVERY, STORAGE AND INSPECTIONS):

- (a) Deliver materials to the job-site in factory sealed containers with labels intact bearing manufacturer's name, type of paint and instructions for mixing and/or reducing.
- (b) Store in suitable dry, clean and well ventilated location at the job-site where directed by the City Engineer or the Warehouse Supervisor at the job-site.

(c) **Inspection:** Required for approval before containers are opened. Condemned or damaged materials shall be removed from the job-site.

(d) Protect all paint materials from exposure to weather or damage as caused by other construction operations.

1.06- ENVIRONMENTAL CONDITIONS: Do not apply exterior paint in damp, rainy weather. Do not apply paint when temperature is below 50 degrees F or on damp or wet surfaces.

1.07 - MAINTENANCE MATERIALS: (Extra Stack)

(a) **Required:** Provide one full quart in sealed container of each color and type of paint used in the project for finish paint coats, and identify each container with manufacturer's name, product name, the color and type of paint it contains.

(b) **Delivery:** Upon completion of the project, the required maintenance paint materials shall be furnished, delivered and stored on the job-site by the Contractor, as directed by the City Engineer, as a condition precedent to the City's acceptance of the work of this Section.

1.08 - PROTECTION: Required for all surfaces not to be painted. Mask off where necessary. Repair or replace damaged work with new work, subject to the approval of the City Engineer, at no added cost to the City.

1.09 - CLEAN-UP:

(a) **At End of Each Work Day:** Return materials and equipment to storage areas. Remove paint or oil-saturated cloths from the job-site daily or hang out flat and single to dry.

(b) **Final Clean-Up:** Restore surfaces, not to be painted, to original condition; remove from the job-site all tools, equipment, rubbish and debris; leave premises in broom clean condition.

1.10 - REQUIREMENTS OF REGULATORY AGENCY:

(a) All paints shall conform to the South Coast Air Quality Management District Regulations. All paint containers to be properly labeled. Provide the City Engineer with "Certifications of Compliance", if requested.

(b) **Codes and Regulations:** Work, equipment and materials must conform to applicable Federal, State, County and City of Los Angeles Laws and Regulations. Current manufacturer's materials safety sheets for all materials used and/or stored on the job-site must be on the job-site at all times.

2.01 - PRODUCTS

2.01 - PAINT MATERIALS: (As Applicable)

- (a) **General:** Factory mixed; products of manufacturer's as hereinafter specified or products which have been tested and approved equal to the specified products by the City Engineer prior to date of inviting bids. Samples of other similar products of professed equality may be submitted to the City Engineer for testing, but such products will not be considered for use in this project; time does not permit the City Engineer to properly test unknown paints offered as substitutes for paints specified for this project conform to provisions of Section 12 in DIVISION 1 - GENERAL PROVISIONS.
- (b) **Exterior Trim Enamel:**
 - 1. Sinclair - "Sash and Trim Enamel GE2.
 - 2. Dunn-Edwards - Enamelized House Paint Gloss No. QD60.
 - 3. Sherwin Williams - B54.
- (c) **Rust Inhibitive Primer:**
 - 1. Sinclair - "Chrome Oxide Primer No. 15". (lead-free)
 - 2. Dunn-Edwards - "Red-Oxide Primer No. 43-4". (lead-free)
 - 3. Frazee No. 664 - Rust Stop Primer.
- (d) **Galvanized Metal Primer:**
 - 1. Sinclair - "Zinc Dust Primer No. 25".
 - 2. Dunn-Edwards - "Van Prime" No. W711.
 - 3. Frazee - No. 693 Zinc Dust Primer.
- (e) **Pretreatment - For Galvanized Metal Surfaces:**
 - 1. Sinclair - "Vinyl Wash Primer No. 7113".
 - 2. Dunn-Edwards - "Galva-Etch No. GE123".
 - 3. Frazee - "Galva-Grip".

2.02 - MISCELLANEOUS MATERIALS: (As Applicable)

- (a) **Thinner:** As recommended by the Paint Manufacturer - ASTM D235.
- (b) **Rust Remover:** Manganese Phosphate No. 7 by Arnett Associates.
- (c) **Other Materials:** As suitable and approved by the City Engineer.

3.00 - EXECUTION

3.01 - PREPARATION OF SURFACES: (As Applicable)

(a) General:

1. Finished, cleaned, free from foreign matter and defects, dry to the greatest degree possible.
2. Contractor responsible for unsatisfactory work due to improper condition of surfaces.
3. If any metal or other surface to be finished cannot be put into proper condition for finishing by customary cleaning, operation, report to the City Engineer all such condition, then repair or replace such surfaces as necessary for satisfactory finishing; as directed by the City Engineer.
4. Hardware, Switch Plates and Similar Items: Remove or loosen prior to preparation and painting operations and upon completion of such work, restore removed or loosened items to their original position.

(b) Uncoated Ferrous Metal:

1. Remove dirt, rust, mill scale with scrapers, wire brushes, sandblasting or otherwise approved by the City Engineer.

(c) Galvanized Metal:

1. Clean with solvent to remove oil and grease.
2. Treat with "Treatment Material" hereinbefore specified in Material Section to ensure positive paint adhesion.

(d) Copper Pipe: Rub with steel wool to remove the polish and mill coating and clean with solvent.

(e) Shop Coated Metal:

1. Cleaned of dust, dirt and other foreign matter.
2. Spot coat field connections, welds, soldered joints and burned or abraded areas of shop coating.

3.02 - APPLICATION AND WORKMANSHIP: (As Applicable)

(a) Application:

1. By first class journeymen painters.

2. In accordance with standards as set forth by the Painting and Decorating Contractors Association of America, and in accordance with paint manufacturer's directions. Adequately ventilate freshly air circulation for at least 24-hours after painting application.
3. All metal work to be hand brushed. All other surfaces may be sprayed as approved by the City Engineer.

(b) Workmanship:

1. Each coat even with uniform color and texture.
2. Free from sags, runs, brush marks, dirt, cloudy or mottled surfaces, scratches, cracks or other blemishes and thin coating on arises.
3. Mixing and thinning of paint materials, thoroughly stir, strain and keep at a uniform consistency during application in street accordance with manufacturer's directions as approved by the City Engineer. Do not mix together materials of different manufacturers. Packaged paint materials may be thinned just prior to application in accordance with manufacturer's directions.

(c) Coats: (As Applicable)

1. Number of necessary coats to produce specified workmanship, numbers specified in these Specifications is the minimum acceptable.
2. If full coverage is not obtained with the specified number of coats, apply at no extra cost such coats as are necessary to produce the required finish as approved by the City Engineer.
3. Each coat in full coverage; approval of each coat by City Engineer required before succeeding coat is applied.
4. Undercoats to be dry and hard before succeeding coats are applied and to be tinted to approximate color of finish coat.
5. Suitably sand as necessary for proper finish.
6. Primer coats and succeeding coats for each finish to be products of same manufacturer unless otherwise specified, or authorized by the City Engineer.

(d) Colors:

1. As noted in these Specifications or on the Contract Drawings, as selected by the City Engineer or to match existing adjacent structure.
2. Each coat a proper ground coat for the succeeding coat and differing appreciably in tint from preceding coat.
3. Finish coats to match approved samples.

3.03 - PAINT FINISHES: Surfaces shall be finished in accordance with the following procedure for the surfaces and finish desired thereon.

(a) Exterior Finishes:

1. Metal-Ferrous Surfaces
1st Coat - Rust Inhibitive Primer
2nd and 3rd Coats - Exterior Trim Enamel
2. Galvanized Metals
1st Coat - Galvanized Metal Primer
2nd and 3rd Coats - Exterior Oil Paint

3.04 - PAINTING MECHANICAL AND ELECTRICAL WORK: (As Applicable)

- (a)** Paint all mechanical and electrical equipment, including exposed metal pipes, pipe standards, supports, copper piping, and exposed mechanical equipment.
1. Surfaces of mechanical and electrical work shall match the finish of the adjacent painted wall surfaces where located.
 2. Finish all exterior mechanical equipment as indicated on the Contract Drawings or in these Specifications.

3.05 - TOUCH-UP PAINTING:

- (a) Required:** All areas or items scratched, marred or defaced in any manner by the Contractor's operations, as directed by the City Engineer at no added cost to the City.

(END OF SECTION)

SECTION 1504
AUTOMOTIVE FUEL STORAGE AND DISPENSING

1.00 - GENERAL

1.01 - DESCRIPTION: Removal and replacement of underground storage tanks and piping in connection with motor oil, hydraulic oil and waste oil. The following list of major items is for the convenience of the Contractor only and does not describe the complete scope of the work to be done at the job-site.

- (a) Removal and disposal of existing underground storage tanks and pipings at the job-site.
- (b) **New Underground Storage Tanks:**
 - 1. 1000 gallon capacity motor oil tank.
 - 2. 1000 gallon capacity hydraulic oil tank.
 - 3. 1000 gallon capacity waste oil tank.
- (c) New leak detector and monitoring equipment at the job-site.
- (d) Piping and accessories as required for a complete facility.
- (e) New remote waste oil sump and piping replacing existing waste oil sump and piping inside the maintenance shop structure.

1.02 - RELATED WORK SPECIFIED ELSEWHERE:

- (a) Concrete work; and setting of anchor bolts for dispensing unit in Section 0301.
- (b) Miscellaneous Metals in Section 0503.
- (c) Painting of exposed piping and equipment in Section 0907.
- (d) Electrical in Section 1601.

1.03 - REMOVAL OF EXISTING TANKS, AND EQUIPMENT:

- (a) Earthwork in Section 0202.
- (b) **Required:** Removal and disposal of existing underground storage tanks and piping at this job-site. All permits required shall be obtained and paid for by the Contractor.

- (c) **Procedure.** Follow the Los Angeles Fire Department and Fire Prevention Bureau Requirement No. 41. Tanks shall be washed on-site and certified clean and vapor free (zero percent of the lower explosive limit) and then be transported to a certified scrap processor for disposal.
1. Liquid waste from the tanks shall have a hazardous waste manifest for disposal.
 2. Contractor shall dispose of the liquid used to clean, the tank(s) at a State Department of Health Services (DOHS) licensed hazardous waste disposal site. The City Engineer must receive copies of the Toxic Substance Disposal Facility (TDSF) manifest prior to final payment and certification of destruction of removed tanks.
- (d) In case of soil contamination, the Contractor shall notify the City Engineer and Fire Department for direction. If soil remediation will be resorted to, a "Change Order" shall be given by the City Engineer at a negotiated price per cubic yard. This period of clean-up shall be considered as time extension to the Contract.
1. Contractor shall be required to test soil samples underneath the existing tank(s), piping(s), and dispenser(s)/island after their removal. Presence of a representative from Geotechnical Services Division of the City of L. A. shall be required during this period. Contractor shall inform Geotechnical Services at (213) 485-3805 seven (7) days prior to scheduled date of tank removal.
 2. Soil contamination shall be remediated under the guidance of the Fire Department based on the recommendations of Geotechnical Services Section, City of L. A.
 3. The negotiated cost per cubic yard shall be based upon the extent of contamination, method of remediation allowed, and transportation and disposal of hazardous materials as applicable to State and Local Laws.
- (e) If contaminated soil or underground contaminated water is discovered at the job-site, the Contractor shall immediately notify the City Engineer and Fire Department Inspector and shall stop all work. No work shall resume until notice is given by the City Engineer in writing.
- (f) Contractor shall provide the City Engineer with a soil test report of compaction and disposal manifest for tanks from a certified scrap processor for the job-site prior to requesting payment. Soil compaction permits to be obtained from the City Department of Building and Safety.

- (g) Contractor shall restore all landscaping including lawn, plants and irrigation system to its original state after removal of the tank, if applicable to this job-site.
- (h) Contractor shall restore all water, gas, air and electrical lines disturbed due to the removal of the underground storage tanks and waste oil remove fill sump at the job-site as applicable.

1.04 - GENERAL REQUIREMENTS: (As Applicable)

(a) Locations Indicated On Drawings:

1. Approximate only, except where definitely fixed by dimension notations.
2. To be followed as closely as possible; Contractor's responsibility is to notify Inspector before installation if any interference with other work exists.
3. Subject to rearrangement for proper installation.
4. Certain runs of piping shown distorted to avoid confusion.
5. Diagrammatic drawings to be understood as schemes of required system and not to be used for accurate locations.

(b) Exact Locations:

1. As required for proper installation in available space.
2. Avoid interference with architectural and structural features and work of other trades.
3. Preserve head room and keep openings and passageways clear.
4. Make arrangement neat, occupying minimum space.
5. Subject to approval of City Engineer.
6. Symmetrically with architectural elements.

- (c) Discrepancies or Errors:** In case discrepancies or error occurs between specifications, standard members, regulating code, etc., notify the City Engineer for instructions as directed in DIVISION 1 - GENERAL PROVISIONS of these Specifications.

- (d) Examine all Drawings so as to fully determine the availability of space for the installation of tanks and piping system, dispensing equipment and the extent of work required to be performed in order to coordinate this work with the work of other trades. Determine that access to installed equipment will be adequate for maintenance and services.
- (e) **Cutting and Repair of Structures:**
1. Cutting: Only as authorized by the Inspector.
 2. Repairing: By appropriate mechanics to restore construction to former condition.
 3. Cutting of Openings: Provide through walls and other construction as necessary for passage of pipes, conduits, etc. whether or not indicated on the Contract Drawings.
- (f) **Protection of Work:** As necessary to prevent damage of any kind to materials and installation. Adequately cover fixtures and equipment during construction as required by Inspector.
- (g) **Record Drawings:** Maintain "As-Built" prints indicating accurate layout or locations of all piping, valves, cleanouts, and control equipment as installed. Provide in strict accordance with provisions of Section 42 in DIVISION 1 - GENERAL PROVISIONS of these Specifications.
- (h) **Shop Drawings and List of Materials, Fixtures and Equipment:**
1. General: Submit for approval within 30 days after the Notice to Proceed, in accordance with provisions of Section 11 in DIVISION 1 - GENERAL PROVISIONS of these Specifications, to ensure ample time for checking and processing of the submittals by the City. Delays resulting from improper and untimely Submittals shall be responsibility of the Contractor.
 2. Contractor shall make any corrected re-submittals within 10 days after mailing date from the City Engineer. Start no work and/or operation before approval of re-submittals by the City Engineer.
 3. Required List of Shop Drawings: Only required when proposing a substitute (even equal but different brand) except when specifically required for an individual item.
 4. Required List of Materials, Fixtures and Equipment: Submit complete list of materials, fixtures and

equipment with names and addresses of manufacturers, catalog numbers and trade names. Submit illustrations and descriptive literature for each article proposed as a substitute for a specified article. Descriptive literature to be sufficient for complete evaluation of equality of the proposed substitutions to the specified articles. Underline all pertinent data for each article in each copy of each catalog or brochure in which it is described. Note in letter of transmittal all variations of performance, design and installation.,

5. Disapprovals: Delete any articles, disapproved by the City Engineer as not conforming to specifications or not of proper quality or grade, and provide suitable article in lieu thereof in conformity with the Specifications. Start no purchasing or no work related to the Submittals prior to approval of submittals.
6. Approved List: To be used for procurement without deviation unless otherwise authorized by the City Engineer.
7. Modification of Contract Drawings: In each case where proposed substitute materials or equipment will be required, for proper installation, changes to the design of the project as indicated on the Contract Drawings, furnish appropriate proposed Revision Drawings; prepared and signed by a licensed Architect or Engineer for approval by the City Engineer. Make such drawings sufficiently complete for proper installation of the proposed substitute materials or equipment and for construction by all interested trades of the proposed revisions to the Project. Contractor to bear the cost of the Revision Drawings and the cost of the proposed revised constructions.

(i) **Materials and Workmanship:**

1. General: In conformity with the Los Angeles Municipal Codes, Underwriters' Laboratories and California State Air Resources Board and State Fire Marshal Requirements.
2. Materials: New and in perfect condition. Materials for similar uses to be of same type and manufacture unless otherwise approved.
3. Workmanship: Best standard practice of the plumbing and heating trades.

(j) Permits and Inspections:

1. As required by the Los Angeles City Municipal Codes, L. A. Fire Department and CAL/OSHA and shall be obtained and paid for by the Contractor as noted in Division 1A - GENERAL REQUIREMENTS.
2. The South Coast Air Quality Management District, (SCAQMD) permit shall be secured and paid for by the City of Los Angeles through the Environmental Compliance Coordinator, (E.C.C.) of the Department of General Services. Technical information needed to complete the application shall be transmitted to the ECC as soon as the mechanical design is completed.
3. Contractor shall contact the ECC at (213) 485-8432 to inquire about the status of the SCAQMD Permit.
4. Contractor shall obtain all necessary inspection approvals prior to concealment of the work.
5. Inspections by Los Angeles City Department of Building and Safety, Fire Department and the City Engineer. Final certificate of approval for the entire system is required.
6. Contractor shall furnish a letter from tank manufacturer indicating compatibility with 100% methanol. Letter shall include the address of the job-site.

1.05 - EXCAVATING, TRENCHING AND BACKFILLING:

(a) Excavating:

1. All excavating, trenching and backfilling required for installation of piping and any other devices that are part of work of this Section.
2. Make trenches parallel to footings and not closer than 24-inches to the face of the footing and not below a plane having a downward slope of two horizontal to one vertical from a line 9-inches above the bottom of the footing.
3. Make trench width to provide ample space for proper installation of any piping.
4. Grade bottom of all excavations to uniform slope as required by the code and to prevent formation of pockets in the pipe.

(b) **Protection.** Protect all excavations and trenches against caving-in by shoring or otherwise in conformance with "Construction Safety Orders", Division of Industrial Safety, State of California, Title 8, Subchapter 4, Article 6, Sections 1540 and 1541.

(c) **Backfilling:**

1. Remove debris, trash and form materials from the excavation and trenches prior to backfilling.
2. Do not backfill trenches until the City Engineer and Fire Department have inspected and approved the finished length of pipe, including all fittings and valves.
3. **Backfill Material:** Clean earth material previously removed or imported earth material as approved by the Inspector; free from large clodes, stones, organic material or debris.
4. **All Backfill Over Pipe:** Clean sand or selected fine backfill approved by the Inspector for a thickness of not less than 6-inches around the finished section of pipe; balance of backfill material as specified hereinbefore.
5. Place backfill in layers not exceeding 8-inch thickness, and tamp until required 90% relative compaction is secured in accordance with Section 300-4.7 of "Standard Specifications".
6. Backfill around tanks shall be as specified in Subsection 2.02(e) of this Section, as indicated on the Contract Drawings and as per Fire Department requirements.
7. Finish backfill to suitable elevation to provide for anticipated settlement and shrinkage.
8. Keep all trenches and excavation free of water until backfilled. Remove all water by pumping or as approved by the Inspector.
9. Remove from the job-site all excess excavated and imported material not used for backfill, and all waste and debris.

1.06 - ACCEPTANCE OF WORK: Dispensing systems will not be considered for acceptance until the Contractor has completed Contracted work, has demonstrated to the representative of the City Engineer

that the systems operate properly in accordance with these Specifications and the standards herein referenced and final approval has been received from the Fire Department.

1.07 - SOIL INFORMATION:

- (a) Information on the Contract Drawings or in the Soils Investigations Reports does not constitute a guarantee of uniformity of soils conditions on the construction site.
- (b) Copies of Soil Contamination Report prepared by the Bureau of Engineering, Department of Public Works are available at Los Angeles City Hall East in Room 890, Architectural Division and are herein made a part of these Specifications. Geotechnical report dated November 29, 1989, File No. 89-182.

2.00 - PRODUCTS, EQUIPMENT AND INSTALLATION

2.01 - PIPING:

(a) Materials for Motor Oil and Hydraulic Oil Supply:

- 1. Pipe and Fittings: Fuel supply pipe (primary piping) shall be Carbon Steel Schedule 40 and pipe fittings shall be of malleable iron. Primary piping shall have a protective corrosion resistive coating of approved type, machined applied and conforming to recognized standards. Secondary containment piping shall be Fiberglass-Dualoy 3000/L by Ameron or U.L. approved equal. Material described shall be compatible with petroleum products and methanol fuel.

(b) Material for Leak Detection Sensor and Waste Oil Piping:
Steel Schedule 40 and corrosion protected.

(c) Pipe Sizes:

- 1. Fill Stand Pipe: 4-inch inside diameter.
- 2. Vent Stand Pipe: 4-inch inside diameter.
- 3. Oil Supply Pipe: 2-inch diameter primary pipe and 4-inch diameter secondary pipe.
- 4. Remote Fill Pipe For Waste Oil: 4-inch diameter primary pipe and 4-inch diameter secondary pipe.
- 5. Vent Pipes:
 - a. Underground: 2-inch diameter primary and 4-inch diameter secondary.

b. Aboveground: 2-inch diameter.

6. Leak Detection Sensor Piping: 1-1/2-inch steel Schedule 40.

(d) Steel Pipe Waterproofing and Protection:

1. Required Covering: All steel pipe and fittings embedded in ground or in concrete.
2. Materials: Plastic tape approved by Los Angeles City, Department of Building and Safety.
3. Hand Application: Clean all material thoroughly to the bare metal base. Remove all grease and oil with a non-oily solvent. File or grind to smooth burrs, sharp edges and rough spots. Make all surfaces dry and dust free. Spiral wrap pipes with uniform laps by hand, completing one layer with prescribed laps; then reverse direction of wrapping and apply a second layer in the same manner, again maintaining prescribed laps, all widths of tape, lengths of rolls and dimensions of laps shall be as recommended by manufacturer in the manufacturer's material requirements table. Exercise care to ensure a uniformly applied, tightly bonded tape, free of air pockets, voids and wrinkles.
4. Machine Application: Clean all materials thoroughly to the bare metal base for machine application. Spiral wrap pipe uniformly by an approved manual or power driven machine with 50% laps and one over wrap of 50/50 lb. asphalt laminated draft, either wet strength one side, or reinforced. All widths of tape, lengths of rolls and application shall be as recommended by manufacturer in manufacturer's material requirements table. Exercise care to ensure a uniformly applied, tightly bonded tape, free of air pockets, voids and wrinkles.

(e) Piping Installation:

1. Slope all the semi-horizontal run of pipings (Fuel Supply/Suction, Vapor Recovery and Vent), 1/4-inch per foot towards tanks. Vent riser pipe shall be extended at least 18-inches above the highest point of any roof of any building within 15-feet of termination, 12-feet above adjacent ground level and at least 10-feet away from any building openings.
2. Install in accordance with best standard practice of the trade, and in such a manner not to cause any strain on tank connections.

3. Use flexible piping at connections to the tank and at the pump/dispenser base riser connection and any riser between tank and dispenser, to relieve any stress that may develop due to tank settling or movement.
 4. Vapor Recovery Pipe Tank Connection: Make connections such that there is a slope having no traps or dips toward the tank.
 5. Suction pipe or submersible pump inlet shall be extended into the tank with bottom clearance of 3-inches and 5-inches respectively as shown in the Drawing.
 6. Inside of Pipes and Tank: Keep clean and free from dirt, water, or other foreign matter by closing opening with pipe plugs.
 7. Backfilling: As specified in Paragraph 1.05(c).
 8. All piping shall be installed such that there is a slope having no traps or dips towards the tank.
 9. Tank Connections: Install through tank by means of a 4" x 2" double tapped tank bushing, must be secondarily contained.
 10. Piping, fittings and adhesive to be used for joints must be petroleum products and methanol fuel compatible. Use rector seal compound manufactured by Rector Seal Co. on all steel pipe joints. Use RP48A-two part epoxy manufactured by Dualoy on secondary wall pipe joints.
- (f) **Fill Assembly:** Automatic Overfill Prevention Valve Maintenance Hole Assembly manufactured by OPW or approved equivalent. The OPW Valve Assembly is consisting of the following:
1. 4" coaxial pop-up type drop tube with overfill prevention valve, and adapter-all represented by Model #61SOP. (No drop tube required for waste oil).
 2. Containment Assembly: OPWIC-4000.
 3. Cap: OPW 634TT.
 4. Other components (if required) to complete maintenance hole assembly.
- (g) **Vent Cap:** EMCO No. A4103-004, or approved equal, upward V-vent installed 18-inches above roof.

- (h) **Supply, Vent and Gauge Maintenance** les: 36" diameter round maintenance hole with cover, gasket and screws. Maintenance hole cover shall be traffic-rated and watertight. Provide one 12" x 12" access door gauge. Access door shall be traffic-rated and watertight. Coat skirt of maintenance hole with epoxy resin for corrosion protection. CNI Manufacturing, Model 239DGL-282-0 or approved equal.
- (i) **Float Check Valve:** EMCO No. A79-021 extractor float vent valve assembly with ball valve A75-004 or approved equal. ,
- (j) **Shop Drawings and Manufacturer's Reference Data:** Required.

2.02 - TANKS:

- (a) **Capacity:** Shall be 1000 gallons for motor oil, 1000 gallons for hydraulic oil and 1000 gallons for waste oil. Tanks shall be double walled, fiberglass coated steel tanks of size and weight indicated in the "Tank Schedule" on the Contract Drawings. Tanks shall be UL and LAFD approved. The approval shall cover the entire steel assembly and exterior fiberglass reinforced polyester resin. Tanks shall have a 30-year replacement warranty against corrosion failure. Tanks shall include necessary piping sump. Tanks shall be Joor "Plasteel" Composite Double Wall" tank, Ace Buehler "Fibersteel Double Wall" tank or modern welding "Double Wall Glasteel" tank.

(b) Material:

1. "Plasteel Composite Double Wall" as manufactured by Joor Manufacturing Inc. or "Fibersteel Double Wall" as manufactured by Ace Buehler Inc. or "Double Wall Glasteel" tank as manufactured by Modern Welding Co.
 - a. In accordance with the City of Los Angeles Code, Chapter 5, Article 7, "Fire Protection and Prevention".
 - b. Primary Shell: Carbon steel plate.
 - c. Weld all joints.
 - d. Secondary Shell: Composite steel and fiberglass reinforced plastic. Fiberglass reinforced plastic shall be composed of a precise mixture of resin, catalyst and chopped roving of fiberglass applied by spraying.
 - e. Built to approved U.L. Standards including corrosion resistance.
 - f. Submit a written certification stating that the outer shell has passed the holiday test detector operating at 35,000 volts.

- g. Make lifting lugs at ends of tanks capable of withstanding weight of tank with safety factor of 3 to 1.
- h. Openings Required: Refer to the Contract Drawings for fitting locations and sizes. Provide bushing or cap at tank as required.
- i. Tank bottom protection pad at fill standpipe opening.
- j. 30-year warranty for interior and exterior corrosion.
- k. Tank's primary and secondary walls shall be compatible with petroleum products and methanol fuel.

(c) Labeling and Certificates:

- 1. As required by City and State Ordinances and suitably attached to tanks prior to shipment to the job-site.
- 2. Appropriate label of the Underwriters' Laboratories, Inc. or an equivalent label of another testing agency approved by the City Fire Commission.
- 3. A label of non-ferrous metal, bearing the name of the tank manufacturer, the letters "L.A.F.D.", the approval number, the gauge of metal of the tank and the capacity of the tank in gallons.

(d) Inside of Tanks: Keep clean and free from dirt, water, or other foreign matter by closing openings with pipe plugs.

(e) Excavation and Backfill:

- 1. All excavation as necessary in accordance with the requirements of the Los Angeles Municipal Code.
- 2. Backfill Materials for Plasteel Tank: Clean sand.
- 3. Backfill: Backfill with clean sand from undersides of the tank to an elevation of one (1) foot above the top of the tank, balance of backfill as specified in Section 0202 - EARTHWORK.
- 4. Inspection: Tank excavation not to be backfilled until the concrete ballast pads and underground oil storage tanks and all piping have been installed and the Fire Department and City Engineer have completed their inspection of the installation.

- (f) **Installation of Tanks:** Anchor tanks in place to concrete ballast slabs by means of galvanized straps, anchor rods and nuts. Apply epoxy resin coating to straps, anchor rods and nuts in field to prevent corrosion. Conform to the details on Drawing and manufacturer's recommendations and in accordance with Section 57.31.42 of the Municipal Code of the City of Los Angeles, the requirements of the National Board of Fire Underwriters, applicable State of California Codes and as approved by the Los Angeles Fire Department and City Engineer.
- (g) **Shop Drawings:** Required; for approval prior to fabrication of the tanks as specified in Subsection 1.04(h) of this Section.

2.03 - LEAK DETECTOR: Leak detection and monitoring (LDM) panel: "Leakalert" Model LA-08 as manufactured by Universal Sensors and Devices, Inc. or approved equal, shall be as follows:

- (a) **General:** System shall be designed specifically for continuous underground oil storage tanks leak detection applications and be capable of independent channel inputs which can take liquid, vapor or combination of both types of sensors. Each channel shall operate from it's own plug in circuit board. Each circuit board shall have a manual test button to check integrity of the circuitry. System shall operate on 120 volt, single phase, 60 hertz power supply. Channels shall be one LALS-2P and seven LALS-1P.
- (b) **Sensors:** A metal-oxide semi-conductor suitable for detection of organic vapors and a thermal element suitable for detecting the presence of any liquid. Sensors shall operate with intrinsically safe low voltage and current. Provide 10" diameter watertight cast iron maintenance hole with cover. Maintenance hole and cover shall be watertight and traffic-rated. All metallic components shall be coated with epoxy for corrosion protection.
- (c) **Cabinet:** Enclosure shall contain all components, except sensors, and be U.L. listed NEMA 4 type. Line and low voltage sections of the panel shall be separated by a vapor tight bakelite plastic barrier. In addition, electrical interface between sensors and the electronic control card modules shall be facilitated with Factory Mutual (FM) certified Zener diode safety barriers.
- (d) **Alarms:** Each channel shall be independently adjustable for sensitivity. Audible and visual alarms shall be activated when a hazardous level is detected. Panel shall have an auxiliary 5A/125VAC SPDT contractor for remote alarm.
- (e) **Installation:** Contractor shall mount panel on unistrut stand bolted to wall at location as indicated in building drawings.

2.04 - FUEL LEVEL GAUGE: Steil Safety Gauge Type B-74 manufactured by Safety Gage Co., Inc., 4622 Forest, Kansas City, Missouri 64110, (or approved equal). Install as recommended by the manufacturer. Provide one fuel level gauge for each tank.

3.00 - EXECUTION:

3.01 - GENERAL:

- (a) Installation of various materials and equipment covered in, Part 2 of this Section under each item specified.
- (b) Install and assemble all items listed in this Specification in accordance with best standard practice of the trade so as to be satisfactory and workable systems as determined by the City Engineer.

3.02 - TESTS:

- (a) **Pressure Tests:** Make an air test of each tank and piping to stubs above ground level after completion of installation with all openings capped. Run air through tank and piping at a pressure not to exceed 5 pounds per square inch for a period of 1 hour. (Secondary containment piping shall be tested under the same method). (Product piping shall be tested at 75 psi).
- (b) **Operating Tests:** Operate each piece of equipment and each system to demonstrate compliance with these Specifications.
- (c) **Installation:** Make all tests in the presence of City Engineer for approval by him and by authorized representative of the Fire Prevention Bureau of the Los Angeles Fire Department.
- (d) Provide and pay for all necessary equipment, material and labor for tests, except motor oil, hydraulic oil and waste oil required to fill the storage vessels will be supplied by the City.
- (e) Leak Detection System testing procedure noted on Sheet M-4.

3.03 - OPERATING INSTRUCTIONS AND SERVICE MANUAL:

- (a) Carefully prepare full description Service and Operating Manual for the entire system. Submit this Manual for approval at least 10 days before completion of work. Failure to submit manual for approval will delay final inspection and acceptance of work by the City.
- (b) Form in which "Service Manual" is to be presented subject to approval of the City Engineer.

- (c) Include the following items, together with any other necessary pertinent data. This list is not complete and is to be used as a guide only.
1. Part numbers of all replaceable items.
 2. Manufacturer's cut and rating tables.
 3. Oiling, lubrication and greasing data.
 4. Complete electrical and load data from operation test.
 5. All test data for factory and field tests.
 6. Belt sizes, types and length.
 7. Serial numbers of all principal pieces of equipment.
 8. Installing company's names, addresses and phone numbers. Name and address of servicing company if different from installer.
 9. Control diagram and operating sequence, together with labeling of control piping and instruments to match diagram.
 10. Valve list indicating location and function of each.
 11. Insurance company approvals (where required in specific sections).
- (d) After approval by City Engineer, furnish three (3) copies of this Manual to City Engineer for distribution.
- (e) Operating Instructions and Service Manuals are part of final inspection and shall be submitted for approval at least 10 days in advance of request for final inspection.
- (f) Neatly bind Operating Instruction and Service Manuals in stiff cover binders. Identify such Manuals.
- (g) The Contractor shall arrange with the City Engineer for an instructional operating period at the job-site at which time a competent Supervisor shall operate the equipment and instruct the City Engineer's designated representative personnel in all phases and details of operation and maintenance. Any required instructions from the manufacturer's representatives shall also be given at this time. This period shall be three consecutive days unless failure or malfunction of equipment is experienced.

3.04 - EMERGENCY REPAIRS: The City reserves the right to make emergency repairs as required to keep equipment in operation without voiding the Contractor's guarantee bond, or relieving the Contractor of his responsibilities during the bonding period.

(END OF SECTION)

SECTION 1601
ELECTRICAL

1.00 - GENERAL

1.01 - DESCRIPTION: Provide all labor, material and equipment at the , job-site indicated on the Contract Drawings and in these Specifications, including but not limited to the following:

- (a) Complete power system, including controllers, branch circuits, switches and auxiliary equipment.
- (b) Remote alarm pack with reset switch.
- (c) Connection and testing of all electrical equipment and controllers as specified in this and other Sections of the Specification.
- (d) Excavation, trenching and backfilling.

1.02 - RELATED WORK:

- (a) DEMOLITION in Section 0201.
- (b) MISCELLANEOUS METALS in Section 0503.
- (c) PAINTING in Section 0907.
- (d) UNDERGROUND STORAGE TANKS in Section 1504.

1.03 - GENERAL REQUIREMENTS: Perform all work in accordance with the following requirements:

(a) **Applicable Codes:**

- 1. Los Angeles City Electrical Code; hereinafter referred to as "Code".
- 2. Title 24 "State Building Standards", Part 3 "Basic Electrical Regulations".
- 3. California Administrative Code, Title 8.
- 4. Electrical installation method in hazardous area shall conform with Class I, Division 2, Group D location as indicated on the Drawings.
- 5. All other applicable codes.

(b) Applicable Regulations:

1. Electrical Service requirements of the Serving Utility Agency.
2. Electrical equipment apparatus devices and material shall be Underwriters' Laboratories (U.L.) approved type.
3. Regulations of all other authorities having jurisdiction.

(c) Permits and Inspections:

1. Obtain and pay for all required permits.
2. Arrange for all inspections by the City Engineer, by Los Angeles City Building and Safety and City Fire Department Inspectors and by Utility Inspectors as applicable.
3. Certificate of Final Inspection: Obtain the certificate from the Los Angeles City Department of Building and Safety and deliver certificate or copy thereof to the City Engineer.
4. Testing and Laboratory Approval: Obtain and pay for all necessary testing and approval of equipment required by the Los Angeles City Department of Building and Safety.

(d) Location As Indicated On The Drawings:

1. Approximate only, except where definitely fixed by dimensional notations.
2. Follow as closely as possible.
3. Subject to rearrangements for proper installation.
4. Diagrammatic Drawings shall be understood to be schemes of required systems and shall not be used for exact locations.

(e) Exact Locations:

1. As required for proper installation in the space available.
2. Avoid interference with all architectural and structural features and the work of all the other trades.

3. Preserve headroom and keep all openings and passageways clear.
 4. Provide a neat arrangement, occupying minimum space.
- (f) Cutting and Repair of Existing Structures: (As Applicable)**
1. Cuttings: As necessary to accomplish the work and in close cooperation with the resident Inspector.
 2. Repairing: By the appropriate craftsman to restore construction to the former condition.
 3. Openings through fire-rated concrete or masonry construction for passage of raceways or cables shall be sealed with U.L. listed devices or material with fire rating equal to original construction.
- (g) Protection:** As necessary to prevent damage of any kind to, or the theft of materials and installations.
- (h) Record Drawings:** Provide in strict accordance with provisions of Section 42 in Division 1 - GENERAL PROVISIONS of these Specifications. Indicate accurate locations of all conduit runs, names and model numbers of accepted substituted equipment, and equipment as installed.
- (i) Use of Materials and Shop Drawings:**
- General: Shop Drawings where required shall be in accordance with Section 11 in Division 1 - GENERAL PROVISIONS, except as modified by this Section. Make initial submittals within 30 days after the date of Notice to Proceed. Make corrected submittals within 10 days after the mailing date of corrections by the City Engineer.
1. Materials Submitted as Specified:
 - a. Material List: The material list for items needed in this work shall be furnished as specified.
 - b. Shop Drawings: Shop Drawings for specified items are not required, except where specifically called for in this Section.
 2. Materials Submitted as Substitutes: All materials submitted as a substitution shall conform to the requirements of Section 12 of Division 1 - GENERAL PROVISIONS, and shall be accompanied by the following;

- a. Material List: The material list shall itemize model numbers and manufacturer's names and addresses.
 - b. Shop Drawings: Illustrations and descriptive literature for each article proposed as a substitute for a specified article shall be submitted together with descriptive literature of the item originally specified. Make descriptive literature sufficient for a complete evaluation of the equality of the proposed substitutions to the specified articles. Indicate approval by a recognized testing laboratory. Underline specified requirements for each article in each copy of each catalog or brochure in which it is described. Indicate in letters of transmittal all variations, as indicated in the published data, in design, performance and installation between the proposed substitutes and the specified items. The City Engineer may require actual equipment submitted for evaluation.
3. Disapprovals: Any article disapproved by the City Engineer as not conforming to the Specifications or not being of the proper quality or grade, shall be deleted and suitable articles shall be provided in lieu thereof that conform to the Specifications.
 4. Modification of Contract Drawings: In each case where proposed substitute materials or equipment will require, for proper installation, changes to the design or the project as indicated on the Contract Drawings, appropriate proposed Revision Drawings prepared and signed by a licensed Architect or Engineer shall be furnished by the Contractor for approval by the City Engineer. Make such Drawings sufficiently complete for the proper installation of the proposed substitute materials or equipment and for construction by all the interested trades of the proposed revision to the project. The cost of the Drawings and the cost of the proposed revised construction shall be borne by the Contractor.

(j) Workmanship, Materials and Equipment:

1. Materials and Equipment: Shall be new and undamaged, and materials and equipment for similar uses shall be of the same type and from the same manufacturer where feasible.
2. Workmanship: Shall be the best standard practice of the trade.

1.04 - GROUNDING AND BONDING SYSTEMS: (As Required)

- (a) **Grounding and Bonding:** Ground each electrical service to the cold water piping system in accordance with Code and provide supplemental grounding as follows: (As Applicable)
1. **Structural Steel Electrode:** Bond the structural steel frame of the building or structure to the point of ground at service equipment with a continuous bonding conductor equal in size to the grounding electrode conductor, but not smaller than No. 4 A.W.G.
 2. **Concrete-Encased Electrode:** Provide three minimum No. 4 horizontal reinforcing bars in and near the bottom of the building or structure footing, each with a minimum continuous (unspliced) length of 20-feet. Install a continuous bonding conductor equal in size to the grounding electrode conductors, but not smaller than No. 4 A.W.G., bonded to each reinforcing bar by means of corrosion-resistant clamps or welding, to the point of ground at service equipment. The bonding conductor shall be installed in Schedule 40 rigid PVC conduit from a point within the footing continuous to the service equipment. A single size 3/0 bare copper conductor with a minimum continuous length of 20-feet may be used in lieu of the three No. 4 reinforcing bars.
- (b) **Separate Buildings or Structures:** The metal enclosure of the building or structure disconnecting means shall be grounded by an equipment grounding conductor run with, or enclosing the supply circuit conductors and bonded to available grounding electrodes at the separate building or structure.
- (c) **Equipment Grounding:** All control devices, motors and other apparatus including non current carrying enclosures, frames shall be permanently and effectively grounded.
- (d) **Tests for Grounding:** Before completion of the project, all grounds shall be tested by the City Engineer for compliance with the Code. The overall resistance to ground shall not exceed 5 ohms. The Contractor shall make all the corrections necessary to limit the resistance to ground to 5 ohms maximum. The tests shall be recorded on as-builts as a part of the building record.

1.05 - GFI PROTECTION: Provide Ground-Fault protection during construction for all 120 volt, 15 amp, and 20 amp receptacles that are not a part of the permanent wiring of the structure of building. So-called "assured ground" programs will not be acceptable in lieu of GFI devices.

1.06 - EXCAVATING, TRENCHING AND BACKFILLING:

(a) Excavating: (As Applicable)

1. All excavating and trenching required to install all electrical work; depth of excavations and trenches as necessary for proper installation.
2. Make trenches parallel to footings not closer than 18" to the face of the footing and not be below a plane, having a downward slope of two horizontal to one vertical, from a line 9" above the bottom of the footing.
3. Grade bottom of all excavations to a uniform slope as required to prevent the formation of water pockets in the conduit.

(b) Protection: Protect all excavations and trenches against caving-in by shoring or otherwise, in conformance with "Construction Safety Orders", Division of Industrial Safety, State of California, Title 8, Subchapter 4, Article 6, Sections 1540 and 1541, and as prescribed by the Los Angeles City Department of Building and Safety.

(c) Backfilling:

1. Remove debris, trash and form materials from the excavation prior to backfilling.
2. Trenches: Do not backfill until the Inspector has approved the conduit or pipe installation.
3. Backfill Materials: Clean earth material previously removed or imported earth materials; all free from large clods, stones, organic material or debris.
4. All Backfill Over Conduit or Pipes: Provide washed sand or selected fine backfill approved by the Inspector for a thickness of not less than 12" above the finished section of conduit or pipe; balance of backfill material as specified in Paragraph 3 above.
5. Place backfill in layers not exceeding 8" thickness, moisten to optimum moisture content and tamp until required 90% relative compaction is secured in accordance with Section 300-4.7 of "Standard Specifications".
6. Finish to suitable elevation to provide for anticipated settlement and shrinkage ready to receive concrete or asphalt concrete paving repairs as applicable.
7. Keep all trenches and excavations free of water until ready for backfilling; remove all water by pumping or other methods approved by the Inspector.

8. Remove from the job-site all excess excavated and imported materials not used for backfill and all waste and debris.

2.00 - MATERIALS AND GENERAL INSTALLATION

2.01 - CONDUIT FOR ALL SYSTEMS:

(a) **Required:** All wiring shall be in threaded rigid steel conduit except as follows:

1. Electrical ferrous metallic tubing may be used above ground inside of building, where not encased in masonry or concrete; unless not permitted by Code.
2. Flexible, metallic, ferrous conduit not over 4-feet in length shall be used indoors for equipment and fixture connections where any movement is required or any absorbent mounting or vibration couplings are used.

(b) **Types:**

1. Rigid Steel Conduit: Standard weight, hot-dip galvanized in accordance with ANSI Specifications C80-1 and UL Standard 6, 1973. Zinc shall conform to ASTM B-6. Broken, cut, burned or abraded surfaces are not acceptable.
2. Electrical Ferrous Metallic Tubing: Thin-wall, hot-dip galvanized in accordance with ANSI Specification C80-3.
3. Flexible, Metallic Ferrous Conduit: Shall conform to UL Standard 1, 1973.

(c) **Fittings and Accessories:**

1. For Rigid Steel Conduit: Approved Types: Threaded couplings or Erickson couplings for joining runs. Threadless compression connectors and couplings may be used aboveground. Threadless connections shall have insulated throats or non-metallic bushings. Grounding bushings shall be o.z.
2. For Electrical Ferrous Metallic Tubing: Steel compression gland or set screw type couplings and connectors with insulated throats.
3. For Flexible Ferrous Metallic Conduit: "Jake" or other types approved by the City Engineer; sealtight oil-resistant UL listed, for liquid tight oil-resistant conduit.

4. Prohibited:

- a. Crimp type fittings and accessories for electrical metallic tubing including the interlock body and pressure cast pot metal type.
- b. One piece swivel couplings installed underground.

2.02 - CONDUIT FOR HAZARDOUS AREA:

(a) Types:

1. Rigid Steel Conduit: Standard weight, hot-dip galvanized steel size in accordance with NFPA 70.

(b) Fittings and Accessories:

1. Rigid Steel Conduit: Standard thread coupling or approved explosion proof conduit union. Threadless connectors shall not be used in hazardous area.
2. Seal Fitting: Threaded cast iron Crouse-Hinds type "EYS" series located on Drawing Sheet E-1 in Detail 2-E1.
3. Flexible Conduit: Explosion proved type Crouse-Hinds Type "EC" series, or approved equal.

2.03 - CONDUCTORS: (Approved by the City Engineer)

(a) Required:

1. Type THHN-THWN, 600 volt insulation for all general wiring per UL Standard 83, 1974, and ASTM D-734.
2. Multi-conductor cable for detector, Belden No. 9418.

(b) Types:

1. Copper wires for all conductors and cables.
2. Solid for conductors of No. 10 AWG and smaller, general wiring where flexibility or regular movement is not required.
3. Stranded for conductors of No. 8 AWG and larger, or for flexibility where indicated on the Drawings as a flexible conduit connection.
4. The minimum conductor size on general wiring shall be No. 12 AWG, except as indicated otherwise on the Drawings.

2.04 - BOXES (FOR HAZARDOUS AREAS):

(a) Types:

1. Provide malleable iron bodies with brazed hubs for use with metal conduit.
2. Pull and junction boxes in hazardous areas shall be explosion proof, Class 1, Division 2, Crouse-Hinds,, Appleton or approved equal.

- (b) Sizes: Proper code sign for the required number of wires, but not less than 4-inches square.

2.05 - SWITCHES (FOR HAZARDOUS AREAS):

(a) Types:

1. Tumbler switches shall be Specification Grade and shall meet Federal Specification W-S-896e.
2. Provide screwtype terminal switches; push-in type connectors not acceptable.
3. Silver alloy contacts with color coded body for easy identification.

2.06 - OUTLET PLATES AND COVERS (FOR HAZARDOUS AREAS):

- (a) Types: Provide malleable iron plates and covers specifically fabricated to match the boxes or bodies.

2.07 - CONTROLS:

- (a) Required: For all line and low voltage equipment furnished in this and other Sections as required by the Code and as indicated on the Drawings and in these Specifications. All devices shall be listed by UL or other recognized testing laboratory.

(b) Types:

1. Circuit Breakers: Thermal magnetic or interrupting capabilities and trip ratings shall have equal or higher rating than existing units unless otherwise indicated on the Drawings. Each breaker shall be equipped with a device for individual padlocking. Breakers shall meet UL Standard No. 489, 1975 and Federal Specification W-C-375.

3.00 - EXECUTION (FOR HAZARDOUS AREAS)

3.01 - CONDUIT:

- (a) Conduits must be securely fastened to outlet boxes, panelboards, etc., with two (2) nuts and one (1) bushing or thread hub. Conduits shall have ends butted inside coupling. Where conduits cannot be joined by standard thread coupling, approved explosion proof conduit unions shall be used.
- (b) Where conduits pass through exterior concrete or masonry walls or footings below grade, the entrance shall be made watertight. This shall be done by providing pipe sleeves in the concrete or masonry with a 1/2" minimum clearance around conduit caulked with sealant.
- (c) Unless otherwise shown, all wiring to both the power and control circuits shall be explosion proof in strict accordance with the National Electrical Code requirements of Articles 500, 502, 514 and 515 covering installation for Class 1, Division 2 and locations.
- (d) In hazardous or vapor areas, each circuit breaking or other potential spark producing device shall be properly sealed with a sealing fitting as close to the device as possible. A Union shall be installed between the seal and the enclosure it protects.
- (e) Unless otherwise shown, controls and switches shall be in explosion proof housings, Class 1, Division 2.
- (f) Low voltage direct current (VDC) control circuitry shall be "intrinsically safe" in accordance with NFPA 493 and UL 913.

3.02 - CONDUCTORS:

- (a) Locate conductors in raceways, outlet boxes or pull boxes.
- (b) Make splices with wing nut connectors by Ideal Industries, Inc. of the size approved by the number of conductors to be joined for conductors #8 AWG and smaller.
 - 1. Install each feeder conductor without splices from device terminal to device terminal.
 - 2. Install all wiring in raceways unless otherwise indicated on the Drawings.
 - 3. Use no mechanical devices for pulling wires, unless approved by the City Engineer.

(c) Color Code:

1. For Branch Circuits: Each phase conductor of a branch circuit shall be a different color. Conductors at different voltages shall have different colors from other systems. Neutrals of different systems shall be distinguished from each other when in the same enclosure.
2. When a color is established, it shall be maintained throughout the circuit; avoid the use of grey colored insulation.
3. All circuit and grounding conductors shall be insulated.
4. For conductors smaller than #4 AWG, color coding shall be accomplished by inherent insulation color. Tagging, paint or other markings shall not be used for color identification.

3.03 - INSTALLATION OF BOXES AND LOCAL SWITCHES:

- (a) Install boxes where required and coordinate with the general requirements for the proper centering in architectural features. Boxes shall be accessible without removing any part of the building.
- (b) **Local Switches:** Center 4-feet, 0-inches above the floor unless otherwise directed by the City Engineer.

3.04 - CONTROL INSTALLATION:

- (a) **Installation:** Plumb, square and secure.
- (b) **Identification:** Identify all control devices by an engraved plate designating the equipment controlled as instructed by the City Engineer. Provide motors and equipment with neat, legible and permanent identification corresponding to that on the control devices using engraved laminated plastic nameplates affixed with a minimum of two escutcheons pins or screws.
- (c) **Switch Installation:** Group and gang adjacent snap switches in outlet boxes unless otherwise directed by the City Engineer. Install permanent barriers between switches when the voltage exceeds 300 volts.

3.05 - TAGGING:

- (a) **Required:** On both "hot" and neutral wires of all circuits in panelboards, junction, outlet boxes and at each device

shall be tagged to provide positive and permanent identification.

- (b) **Tag:** Scotch numeral tape by the Minnesota Mining and Manufacturing Company or equal.

3.06 - TESTS:

- (a) Provide all the instruments, equipment and labor required for the specified test and conduct all the tests in the presence of the City Engineer or their authorized representatives. Conduct the tests at such time as the Consulting Engineer may direct or as specified. Materials failing to conform to the requirements of the Drawings and Specifications, or any tests described herein will be rejected. Tabulate and forward to the City Engineer in triplicate all the pertinent test data. Include the date of the test, identification and all the items tested, readings for each test, comments where required and the signatures of the individual conducting the test and of the City Engineer's Representative observing the test. Forward all the test data to the City Engineer within ten (10) days of the test performance but in no case later than five (5) working days before the scheduled final inspection.

(b) **The Following Tests Are Required:**

1. After all the feeders have been installed and are still, open-circuited, perform an insulation test on each conductor using a conventional insulation test "Megger". Submit the test data to the City Engineer.
2. Upon completion of the work and adjustment of all the equipment, test all the systems under the Inspector's direction to demonstrate that all the equipment provided and/or connected under the provisions of these Specifications shall function electrically in the manner required. All systems shall test free from short circuits and grounds and be free from mechanical and electrical defects. Test all of the circuits for the proper neutral connections.
3. Demonstrate with an "Integral Source Ohmmeter" that the raceways, boxes, and the other metallic enclosures have an electrical continuity such that the resistance measured from any point on the metallic enclosure system to a nearby water pipe or fitting shall not exceed 3 ohms. (Provide on Ohmmeter at the final inspection for spot readings.)

4. Make any and all additional tests required by the City Engineer to demonstrate conformance to the Drawings and to the Specifications.

(END OF SECTION)